The Oil and Gas Journal

PRODUCING REFINING PIPELINE ENGINEERING MARKETING

Vol. 31 No. 2 TULSA, OKLAHOMA, JUNE 2, 1932

Copyright, 1932, by The Petroleum Publishing Co.

Table of Contents

SPECIAL ARTICLES

Crude Oil Outlook Is Most Favorable 11
By Andrew M. Rowley
California output down to limit set by agreement. Refiners should stimulate automobile driving.

Gulf Coast Plain Undeveloped Empire 12
By L. G. E. Bignell
Large area is good prospective territory with ready market.

Federal Judges Hear East Texas Production Suit 13

Oliver Answers Opposition to Program 14-15-16
By Earl Oliver
Plan for stabilization should result in reduction of governmental supervision.

Gasoline Consumption in March by States 16

Large Sums Spent to Improve Products 17
By Andrew M. Rowley
Buyers and sellers of oil field and refinery equipment should remember years of research.

Five Per Cent Drop in Consumption 18
Federal Economics Committee submits estimates for balance of year.

Proration of World Oil Sales Looms 20
By A. E. Mockler
Compromise agreement at international conference expected.

Our Present Position and Future Course 22
By Amos L. Beaty
President of American Petroleum Institute comments on causes and conditions.

All A. P. I. Divisions Meet in Tulsa 22

How to Meet It (Editorial) 24

Importance of Geology in New Conception of Pool Development 38
By Frederic H. Lahee
Known production structures fall under one or another of four classes.

Ratable Production Effect Upon Ultimate Recovery 40
By E. V. Foran
Natural factors and human elements entering into oil field development problem.

Marketing Returning to Narrow Margins 42
By W. T. Holliday
Industry paying penalty of overexpansion of distributing facilities.

California Production Brought Down 65
By L. P. Stockman
Well within 500,000 bbl. mark and further reduction expected.

Field Problems and Their Solution 78
Edited by Thomas F. Smiley

FIELD OPERATIONS

Late Fields 37

West Texas and North Texas 47
By L. E. Bredberg

Gulf Coast 48
By Neil Williams

East Texas 50-51
By L. E. Bredberg

Michigan 53
By George A. Whitney

Oklahoma 57
By W. A. Spinney

Kansas 60
By W. A. Spinney

North Louisiana-Arkansas, Mississippi 61
By J. R. Crumpton

Central West 62
By George A. Whitney

Eastern Fields 62
By Staff Correspondent

Southwest Texas 64
By B. D. Stevenson

California 65-66
By L. P. Stockman

Tioga Gas Field 67

Rocky Mountain Area 68
By Tolbert R. Ingram

Canada 69
By Victor Lauriston

REFINING AND MARKETING

Kerosene Quotations Continue Decline 26
By C. O. Willson
All grades one-fourth cent lower in Oklahoma. Refinery gasoline unchanged.

Minor Price Changes in Chicago Area 28
By Robert C. Conine
Refinery gasolines unchanged with lower quotations on special naphthas and kerosenes.

Holiday Stimulates East Coast Sales 29
By A. E. Mockler
Tank car markets strengthening. Early upward adjustment of retail prices expected.

Refinery and Crude Prices 30-31

Tank Wagon Quotations 32

Of Interest to Sales Departments 33

Brief Items for Petroleum Refiners 34

Natural Gasoline Manufacture 36

Technical Questions Answered 84
By C. K. Francis, Ph. D.

DEPARTMENTS OF GENERAL INTEREST

Bureau of Mines Report for March 75

Natural Gas Developments 80

Personal Paragraphs About Oil Men 83

Oil Industry Equipment and Supplies 86

Field Operations in April 88

Classified Want Advertisements 95

The Advertisers' Index 96

BRANCH OFFICE CORRESPONDENTS

L. E. Bredberg, 601 Petroleum Building, Fort Worth, Texas.
Robert C. Conine, Room 1416, 6 North Michigan Ave., Chicago, Ill.
J. R. Crumpton, 540 Ricou Brewster Building, Shreveport, La.
Paul A. Elliott, Chronicle Office, Muskegon, Mich.
Tolbert R. Ingram, 130 State Office Building, Denver, Colo.
Charles E. Kern, 606 District National Bank Building, Washington, D. C.
Victor Lauriston, 35 Stanley Ave., Chatham, Ontario, Canada.
B. E. V. Luty, Bessemer Building, Pittsburgh, Pa.
A. E. Mockler, Suite 2803, No. 19 Rector Street, New York, N. Y.
B. D. Stevenson, 1504 Milam Building, San Antonio, Texas.
L. P. Stockman, 522 Union Oil Building, Los Angeles, Calif.
Leon H. Walter, Oil City Derrick, Oil City, Pa.
George A. Whitney, Box 98, Main Post Office, Toledo, Ohio.
Neil Williams, 1116 Second National Bank Building, Houston, Texas.

Refinery Section Starts on Page 26

FLEXIBLE THINGS ENDURE

The New Idea In
LONG LIFE
PAINT
Is
FLEXIBILITY

Fully Patented

FLEXIBLE CUPS ON THE GUIBERSON SWAB WERE A FEATURE OF THE FIRST ONE MADE

Modern paint advertisements explain a new method of preserving elasticity in paint, resulting in a better covering and longer life. Years ago, the first Guiberson Swab came out with the idea of obtaining better service and longer wear through Flexible Cups.

The Flexible Cups on the Guiberson Swab, steered by their basket-shaped guide wires, give way to wrinkles, dents and protrusions in the casing, avoiding damaging wear, yet preserving a seal with the casing, and even with the protrusions, which firm seal lifts all the oil to the surface through worn and pitted casing. The heavier the column, the tighter the seal. Pressure from below collapses the cups, allowing speedier passage into the hole. The Guiberson Swab is doing most of the world's swabbing today.

"Better Be Safe Than Sorry"
The GUIBERSON CORPORATION
Box 1106, Dallas, Texas
California Branch: 1304 Security Title Ins. Bldg., Los Angeles
504 Wright Bldg., Tulsa — First and Locust Sts. Newark, O.

TUBING STRIPPER

The Guiberson Tubing Stripper forms an absolute seal between the tubing and casing, effecting a complete shut-off almost immediately. Made in two halves, permanently hinged together at their backs and fitted with strong screw latch at front, assuring ease and speed in operating. Two handles, cast with the housing, serve as hold-down lugs for heavy pressures.

GUIBERSON

BETTER BE SAFE THAN SORRY

Crude Oil Outlook Is Most Favorable

Highest production in 1931, week ending Aug. 8, average daily output 2,551,807 bbls. Peak of U. S. production, week ending Aug. 24, 1929, average 2,975,435 bbls.

California Output Down to Limit Set by Agreement. Refiners Should Stimulate Automobile Driving

By Andrew M. Rowley

Lowest daily average crude oil production in the United States during 1931 was for week ending Sept. 5, with average output of 1,736,007 bbls.

With crude oil production continuing at a level below estimated requirements, the outlook for this branch of the petroleum industry is most favorable. Operators in California have succeeded in curtailing production to the point set under the voluntary agreement. Other areas are showing comparatively little fluctuation, the rise and fall in Oklahoma being due to operators' taking their allowables early in the month which results in a decline in output at the end of the month.

The decline in consumption of gasoline will necessitate further curtailment of production on the part of crude oil producers and refiners. This decline could be largely offset if refiners made a real effort to stimulate sales of gasoline. Co-operative advertising in newspapers showing points of interest in different communities, road conditions, etc., would increase motoring to a very great extent as the average car owner wants to make short drives on week ends and holidays but seldom knows where to go or how to get there.

Greater activity is being shown in the different promising areas. Considerable drilling is being done in Southwest Texas while the recent discovery in Montgomery County, Texas, will result in quite a drilling campaign in that territory. As an indication of the gain in field work, there have been 56 new locations made in Northern Louisiana during the past 30 days while operations in North Texas continue at a high level. Drilling the streambeds in East Texas is expected to add about 300 wells to that area which now has 5,800 producers.

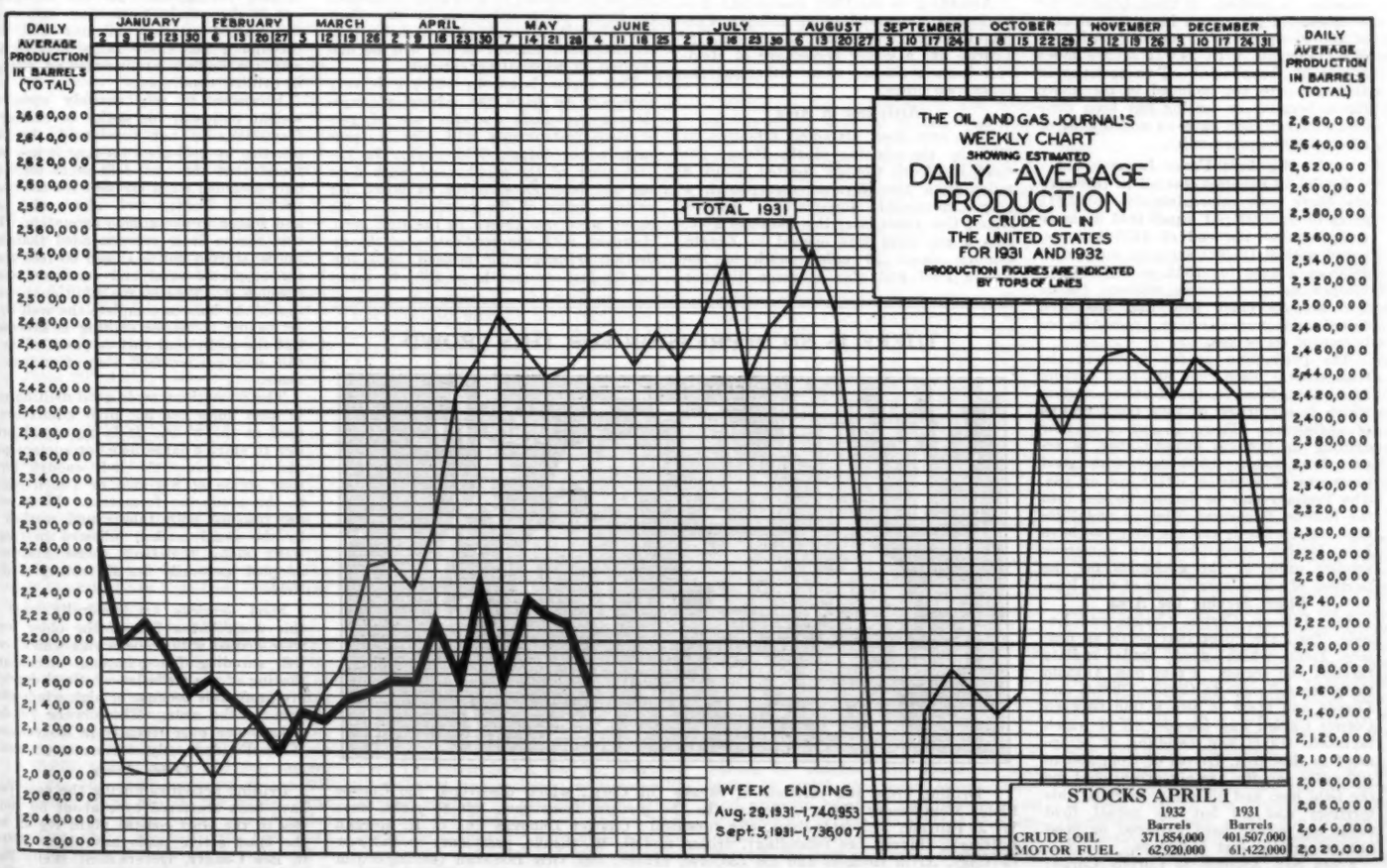
The industry is entering its season of maximum demand. If producers and refiners hold their output near the present level and not increase production of crude oil and gasoline as consumption increases, both the crude and refined oil markets will strengthen and a better price level for all will be warranted. Better prices can be obtained, probably during June, if a sane policy is followed at this time. They will come much quicker if refiners start now to stimulate automobile travel.

CRUDE OIL PRODUCTION IN THE UNITED STATES

Estimated daily average production for the week ending May 28, and a comparison with previous week and one year ago follows:

	May 28	May 21	May 30, 1931
Oklahoma—			
Oklahoma City	81,445	99,530	132,985
Seminole-St. Louis	105,310	121,815	155,860
Remainder of State	211,860	208,975	238,590
Total Oklahoma	398,615	430,320	527,435
East Texas—			
Lathrop	125,870	127,050	71,000
Kilgore	102,315	103,459	156,100
Joiner	106,580	107,573	123,800
Total East Texas	334,765	338,082	350,900
West Texas	184,740	184,538	212,181
North Central Texas	77,655	77,295	80,703
Texas Panhandle	52,935	52,812	61,749
East Central Texas	57,110	56,960	55,600
Gulf Coast Texas	109,740	109,993	141,900
Southwest Texas	59,420	59,205	60,500
Total State of Texas	876,365	878,885	963,533
Kansas	96,720	95,870	106,710
North Louisiana	29,250	29,430	38,655
Gulf Coast Louisiana	40,035	41,136	31,450
Arkansas	34,285	34,365	46,245
Eastern fields	118,000	119,000	111,000
Rocky Mountain area	85,055	86,356	100,419
California—			
Santa Fe Springs	61,750	64,750	72,250
Long Beach	78,000	81,750	86,000
Playa Del Rey	17,750	18,750	28,500
Elwood	15,000	16,750	34,000
Kettleman Hills	57,000	56,000	45,500
Remainder of State	260,500	266,000	271,500
Total California	490,000	504,000	538,750
Total United States	2,168,325	2,219,362	2,464,197

→ Decrease, 51,037 Bbls. Daily ←



Gulf Coast Plain Undeveloped Empire

Large Area Is Good Prospective Territory for Oil and Gas Development With Ready Market for Production as Found

By L. G. E. Bignell
Petroleum Engineering Editor

CORPUS CHRISTI, Tex., May 28.—Every schoolboy or girl who has studied Latin knows that "all Gaul is divided into three parts," and to paraphrase that famous sentence it may be said that "geologically all Southwest Texas is divided into three parts." These parts are the Edwards Plateau north of San Antonio, Tex.; the Balcones fault zone, in which San Antonio is located; and the Gulf coastal plain extending from the southern boundary of the Balcones fault zone to the Gulf of Mexico on the south and the Rio Grande on the west.

This great area comprising approximately 78,000 square miles is all prospective oil and gas territory and aside from development in about 90 pools is still largely an unexplored region. It is too large to cover, even in a preliminary way, in one article and this story will therefore be confined to the Gulf coastal plain area mostly, and that area will be described in only sketchy outline because to deal with all the interesting details would require much more time and space than is available.

In the Gulf coastal plain west of a line forming the eastern boundaries of Gonzales, DeWitt, Victoria and Calhoun Counties there are 30 counties in which oil prospecting has been carried on. These counties or portions of them lying in the Gulf coastal plain area have a total area of 28,946 square miles as compared with West Virginia with 24,022 square miles within its boundaries. Two counties in this area are not included in the above figure because no leasing has been done in them, but they have an added area of about 2,200 square miles.

Big Area Under Lease

In the 30 counties covered in this article there was approximately 3,052,211 acres of undeveloped leases held by large companies at the end of 1931 as compared with 3,048,390 acres at the end of 1930 or a gain for 1931 of 3,821 undeveloped acres of leases without taking into account much land that has been tested and proven either productive or barren of oil or gas.

The production so far found in the Gulf coastal plain zone has been coming from formations in the Tertiary system which is comprised of very thick groups of sediments. There is one well now drilling in Refugio County that is reported as below 9,000 feet with good prospects of securing either oil or gas. The Tertiary may be further divided into the Eocene, Oligocene, Miocene and Pliocene series of beds and the first two have been further subdivided into numerous smaller units by the geologists for the purpose of closer correlation of well logs.

Cities Serving the Area

San Antonio, Corpus Christi and Laredo, Tex., are cities that serve as centers from which good roads radiate through the region. From San Antonio there are railroads to Corpus Christi and Laredo and there is also a line between Corpus Christi and Laredo, all of which facilitate travel and handling of equipment in this area. Drives of from 200 to 400 miles per day are not exceptional for the field men and oil scouts working this territory and all but the actual field roads are either hard surfaced or good natural graded dirt highways.

From San Antonio to Corpus Christi it is 155 miles by paved highway; from Corpus Christi to Laredo it is 143 miles and from Laredo to San Antonio it is 156 miles so the towns form three points of a nearly equal sided triangle. If such a triangle is constructed it will be found that San Antonio is at the north point about midway between Corpus Christi and Laredo.

San Antonio is the logical district from which to cover the northern part of the Gulf coastal plain, the Balcones fault zone and Edwards Plateau. Corpus Christi is the logical center for the balance of the Gulf coastal plain area, while Laredo is forming the base for work along the lower Rio Grande country. All towns have good hotels, with one hotel system at least having hotels in each of the cities.

Corpus Christi is now and will further grow into the center for distribution of supplies and equipment for the Gulf coastal zone because it is served by ocean and coastwise steamers as well as trunk lines of the Southern Pacific, Missouri Pacific and Texas Mexican Railways. Air service is also established between it and other points in this whole region and at San Antonio is located the largest airport in this country, the Randolph Field, recently completed at an expense of over $12,000,000 by the Government. Corpus Christi has quite recently completed a modern airport and air mail service is now being inaugurated.

There are paved highways leading into Corpus Christi from Houston which is about 245 miles away and a speedway has recently been opened out of Corpus Christi along Padre Island to Brownsville at the extreme south end of the Rio Grande Valley.

According to the 1930 census San Antonio has a population of 231,542, Corpus Christi 27,741 and Laredo 32,618. Laredo has a larger percentage of Mexican born residents than either of the other two cities.

Activities in Area

This area first attracted attention in 1909 by the opening of the Reiser gas field in Webb County located about 8 miles from the Reynosa escarpment, a very prominent topographic feature. About five years later the Jennings Pool, also a gas field was opened in Zapata County about 20 miles south of the Reiser Pool and also at some distance from the escarpment. Neither of these pools aroused much interest in the area and it was not until 1921 that the first oil pool was opened by the drilling of the Mirando Valley Field in the northeastern corner of Zapata County and exactly at the edge of the Reynosa escarpment.

Following this discovery there was an active drilling campaign along the escarpment which resulted in the discovery of the Carolina-Texas, Aviator, Leaseholder and Charco-Redondo Fields which are either on the west edge of the Reynosa escarpment or close to it.

Since 1923 wildcatting has been carried on in all directions and has resulted in the discovery of about 90 productive areas and the completion of over 1,000 oil wells in the Laredo district alone which does not include Pettus or the Refugio Fields. Numerous gas wells have also been drilled in this region which are included in the total number of productive areas given above.

Scout reports show there were 135 operations on January 1, 1931, in the portion of the Gulf coastal plain under consideration, and 95 on December 31, 1931, with the completion of 204 dry holes during 1931.

Geological Work Needed

Many producing horizons have been found in this great area ranging in depth from less than 2,000 feet to a recent deep test below 9,000 feet. Formations overlap one another but all dip toward the Gulf of Mexico. Structures along the Balcones fault zone have been more easily worked than those in the Gulf coastal plains which in part accounts for the more active drilling in the former area but in the opinion of geologists competent to judge of possibilities in the Gulf coastal plain it seems quite probable that an enormous amount of oil will be discovered as wildcatting expands.

This region is one in which it is very necessary to have the advice of experienced geologists and the use of geophysical instruments will play a large part in the future field work. In the past much of the geophysical work done has not been as effective as hoped for because many of the pecularities of the region were not known to the field men. However, with the application of the reflection seismographic method, used during the last six months of 1931 by many of the major company geologists, it is believed that improvement can be made.

The oil and gas has accumulated along fault planes in many fields and change of regional dip and local structures has accounted for other pools. Because this faulting and change in regional dip plays a large part in the oil and gas accumulation it is recommended by experienced men that all drilling activities be followed closely by geologists assigned to the well and samples of cuttings secured frequently. The cuttings are being examined by paleontologists familiar with the area as quickly after they are secured as possible.

This is a requisite to drilling operations that should not be overlooked by all operators in this section for it has been found that in many wells sands have been drilled through without testing which might have made productive wells.

The faulting will throw formations out of position from a few to several hundred feet within a very short distance To follow the log of adjacent wells has sometimes led to trouble because the sands were higher or lower than anticipated and the driller either passed through them without testing and coring or did not drill deep enough to reach the pay zone.

Rotaries Used

All drilling in the area is done with rotary outfits, some driven by steam engines and others powered with internal combustion engines. Most major companies now insist that the drilling contractors use weight indicators at the wells and it has been found that these indicators will give evidence of change in drilling formations. As the bit passes out of the gumbo formations into sands the weight on the indicator will vary through a noticeable range and in this way the drillers are warned of changes in drilling conditions.

However, to rely entirely upon the weight indicator for notice of change of formations is not considered the best practice by geologists because it has been found that the best drill stem tests are only obtained when the seat for the tester packer is located well above the sand and seated in the gumbo formation. For this reason it is recommended that coring be started not less than 50 feet above the suspected sand and continued down through it. This means additional reaming of the hole to complete the well or to set casing if deeper drilling is necessary but the additional cost is justified as in this way proper drill stem tests can be made.

The formations made good drilling mud in most holes and but little admixture is used at the wells. It is the usual practice to start a large hole for surface pipe and then reduce the hole enough for a flow string of 8¼-inch or 7-inch casing to the producing formation. Most wells are finished with tubing and washed in by the usual method followed in rotary wells along the Gulf Coast and now adopted generally in all rotary drilled fields.

Steel derricks are generally used in this work but a few of the older wells were drilled with wooden rigs which were left standing for pumping or natural flowing of the wells later. Steel derricks are preferable because of high winds common to the area. There were 19 derricks blown over recently in Government Wells Field, mostly wooden structures.

Active Areas

Drilling activities during the past year have been scattered over about 30 counties in the Gulf coastal plain region but the most active pools have been Pettus in Bee County, Government Wells Pool in Duval County, Escobas Pool in Zap-

THERE IS NO DEPRESSION FOR THIS CROWD

Drilling crew and officials of Strake Oil Corp., which discovered the Conroe Field, Montgomery County, Texas. In the picture, front row, left to right, are: W. J. Pfiffner, Jr., (standing), vice president; Charley Donovan and C. E. Morgan (sitting); Harvey Lee (standing), driller, and G. W. Strake, president; second row (sitting), Alvin Rodgers and Ed LaCorse, driller; top, Otis Donovan (sitting), Jim Graham, Henry Duffy and Dick Evans.

ata County, the shallow Los Olmos Pool in Starr County and more recently the new pool near Rio Grande, a town in southern Starr County. Nueces County, adjacent to the town of Corpus Christi, has also received some attention and several good gas wells have been completed in addition to a few oil wells.

The Pettus Field in Bee County had an important extension to the southwest when Damac Oil Co.'s No. 1 Ray was completed in July, 1931, as a 600-bbl. well. The Pettus sand was encountered in this well at a depth of 3,920 feet and a number of locations were made in the area soon after. This oil is of high gravity ranging from 43 to 49 A.P.I. test and has good antiknock qualities and is in good demand.

The discovery well in this field was Humble Oil & Refining Co.'s No. 1 M. M. McKinney, completed December 15, 1929, and still flowing naturally at the rate of 170 bbls. per day. The Humble Oil & Refining Co. has seven wells in this field and the oil is handled by its pipe line to Refugio and from there to its refinery at Ingleside, opposite Corpus Christi. The Atlantic Oil Producing Co. also has a gathering system in the Pettus Field but delivers the oil to the Humble system.

Some wells in this district are being produced by beam pumping while others are being flowed by the plunger device recently developed by the Hughes Tool Co. of Houston. This flow device seems to be well suited for conditions in this pool and is giving good satisfaction. Other devices working on the same principle are being tried out there also.

Government Wells Field

This field, located west and a little north of San Diego in Duval County, has come in for considerable attention as the Government Wells Pool has recently been extended 3 miles north and one-half mile east, also 1 mile to the south. This makes the pool about 10 miles long, but it is thought that there is a break between the main portion of the pool and the recently discovered south extension. This south pool produces oil from 2,330-40 feet and the oil has a gravity of 24° A.P.I. scale. These wells are making about 500 bbls. per day with plenty of gas, and only one well is making water. The Humble Oil & Refining Co. is taking the output through its pipe lines.

In addition to this active area in Duval County there are numerous other wildcat wells drilling all along the general trend of production over an area about 100 miles long. Some of the wells are getting showings of gas from upper sands at about 1,574 feet, one well making 10,000,000 feet.

This pool is located near the town of Rio Grande in Starr County and is producing from shallow sands. Drilling machines and light rigs are being used for the drilling as production is found at about 575 feet. Other sands are found at 1,093 feet, 1,654 feet and some wells have been drilled to 2,450 feet.

The oil from the shallow sand is known as the Mirando grade and has a gravity of about 20° A.P.I. without gasoline content. The analysis is as follows:

ULTIMATE YIELD

Gasoline (410 endpoint)	None
Furnace oil (410-520)	27.8%
Domestic fuel (520-680)	33.8%
Overhead charging stock	12.2%
Fuel oil	26.2%

The lighter oil from 1,250 feet has a gravity of 30.7° A.P.I. and yields 23 per cent gasoline at 410° F. The gasoline gravity is 47.3 and 60 octane value. The oil is naphthenic in base from both upper and lower sands.

Future Possibilities

The Gulf coastal plain covered by this article has good possibilities for the future demand for both gas and oil and if proper care is used in selecting drilling sites and in drilling the holes there are plenty of opportunities to open up many new pools. Oklahoma has a total area of 70,057 square miles and the eastern half has the great majority of the 325 oil fields there are in the State. The Gulf coastal plain under consideration contains about one-half this area with only 90 fields or individual wells and it seems quite reasonable to assume that it should in time develop as many fields as are now opened in Oklahoma.

The oil is for the most part of very good gravity and as the area is close to tidewater and pipe lines serving the large refineries along the Gulf Coast reach out into this district there should be a ready sale for all oil as found. Tankers can also deliver crude cheaply to eastern seaboard refineries. It is possible that some fields may be restricted as to their daily output of oil, but it is much more likely that restrictions will be placed upon the amount of gas that can be produced with the oil.

There are many reasons for conservation of gas in this area because there are several large projects now under way for industrial plants at Corpus Christi that will require huge quantities of gas for the next 20 years and many of these plants would like to be assured of 50 years' supply.

One outstanding project now well under way is the proposed chemical plant of the Southern Alkali Corp., a subsidiary of the Pittsburgh Plate Glass Co. and the American Syanamid Co. This plant will be located upon a block of land already purchased west of the present port turning basin. A tract of 389 acres of land has been acquired and several millions of dollars will be spent in buildings and equipment.

The present 30-foot ship channel will be extended through Nueces Bay to a second turning basin to be located opposite the Southern Alkali Corp. plant which will permit ocean-going steamers to load and unload at its docks. Railway service is provided for the plant site already.

This plant is located at this point because of the proximity of raw materials needed for the manufacturing processes and the assurance of an ample supply of gas at moderate prices for a long term of years. It is understood that gas lines either 16 or 20 inches in diameter will serve this plant and several contracts have already been signed with oil companies for all gas found on their leases.

The location of the plant at Corpus Christi will permit the manufacture of fertilizer from ammonia, a by-product which will be converted into a nitrate and combined with phosphate secured from Georgia and Florida and delivered by coast steamers at low freight rates.

Looking forward to the completion of the Intracoastal shipping canal between New Orleans and Corpus Christi within the next three years, it is anticipated that a large volume business in fertilizers can be built up by this plant and distribution made by barges through the Intracoastal canal to New Orleans and then up the Mississippi and its tributaries. It is a recognized fact that farm land in this great interior area will need fertilizers within the near future if costs of farm produce are to be maintained at a level which will permit distribution to the great cities and industrial centers of the country.

This is an important phase in the development of Corpus Christi and should have an important bearing upon the prospecting of the area for gas and oil because the Intracoastal canal when completed will connect the Louisiana and Texas coastal line with 16,000 miles of the nation's inland waterways. Part of this canal is now completed east of Orange, Tex., and work is progressing steadily on the western section.

With gas available for fuel there are possibilities of the establishment of many other industries needing cheap fuel for their processes. It is not a generally known fact that Torreon, Mexico, is located as close to Corpus Christi as to Tampico, Mexico, by rail and the Corpus Christi port is now enjoying a large volume of business in lead and zinc concentrates coming from the mining district in north central Mexico.

With an abundance of cheap fuel, zinc and lead smelting may be carried on to an advantage at Corpus Christi. There also is an ample supply of good quality glass sand in the immediate neighborhood of Corpus Christi.

Sulphur is found in Duval County west of Corpus Christi and gypsum is mined southwest of that port. There is also an adequate supply of limestone and salt for use in various chemical and industrial plant operations.

Vessels can sail into and out of Corpus Christi harbor through the 30-foot deep channel that can serve the world's markets and its nearness to the Panama Canal north terminal will shorten the route to the West Coast of America as well as to Pacific Ocean ports.

Much more could be said about these possibilities and personal investigation will develop many other interesting details, but the main point of interest to the oil man is the probable demand for gas because in prospecting this area it has been found that structures are often productive of large gas wells in some formations which if cased off or otherwise protected for future use will give incomes for many years to come.

The holes can be carried on down to producing oil horizons and the crude produced to meet the demand that will undoubtedly exist for it in the very near future, while the gas can be held in reserve to serve industries yet to be built that are assured of cheap fuel in large volumes for a considerable period of years if available to tidewater.

It therefore would appear that this region is to come in for a conservative play during this year and if operators follow the advice of competent geologists, use good equipment in drilling and proper care to check all sands properly, and complete the wells in good mechanical condition a new supply of oil will be found, with ample gas reserves developed to assure an income from the properties for many years to come.

FEDERAL JUDGES HEAR SUIT ON EAST TEXAS PRODUCTION

By Neil Williams

HOUSTON, Tex., May 31.—Taking of testimony in the suit of a group of East Texas operators who are seeking a federal injunction against the enforcement of proration orders by the State Railroad Commission was under way before a three-judge court here today. The hearing, which opened yesterday, is expected to continue through Thursday. It is an aftermath of the case heard by the same three judges here several months ago in which the plaintiffs obtained an injunction against martial law regulation of production. Since that time the East Texas Field has been controlled by orders issued by the Railroad Commission.

While in the former case it was charged that the governor had exceeded his authority in the issuing of orders under the authority of martial law, in the present case it is the contention of the plaintiffs that the Railroad Commission's orders are arbitrary, unreasonable and in violation of the Fourteenth Amendment of the United States constitution and that the orders as have been issued tend to create instead of prevent waste.

Plaintiffs in the case are Atlas Pipe Line Co., E. Constantin, Peoples Petroleum Product, Inc., Whittle Kavanaugh Corp., T. W. Murray, Imperator Oil Corp., Bill & Dave Oil Corp., A. S. Palmer, Arthur F. Graf and Alfred Macmillan, all of which filed individual suits which have been combined by agreement into the one present hearing.

Answering the charges for the defendants, Assistant Attorney General Fred Upchurch denied that the Railroad Commission was acting in collusion with anyone relative to the proration orders and insisted that all such orders were issued for the specific purpose of preventing waste and were adopted following legal hearings.

Witnesses for the plaintiffs who were on the stand most of Monday testified that the present method of restricting production created material waste and declared that wells of the plaintiffs could produce as much as 1,500 to 2,000 bbls. daily without waste. They maintained that in opening of wells to obtain their respective allowables a substantial amount of gas was lost each time which otherwise would not occur if wells could produce larger amounts of oil and flow steadily. It also was contended that closing of the wells or flowing of them at such a low rate of production results in clogging of the wells and flow lines with paraffin which necessitates swabbing the wells back in frequently with consequent loss to the operators.

In testimony of the defendants, it was brought out that taking the oil out too fast would create free gas by taking it out of solution with the oil which would be wasteful, and also that too great water encroachment would result with consequent coning and channeling of oil and loss of oil recovery. It also was brought out that withdrawal of oil at a faster rate than at present would result in material loss of reservoir pressure, due to failure of water to displace the oil at an equal rate. This would bring about waste of oil and retard lifting efficiency. It was shown that at even the present rate of withdrawal of around 325,000 bbls. daily there is a gradual decline in reservoir pressure, and it was suggested that the rate of withdrawal should be reduced still lower to that point at which the water encroachment and pressure balanced the amount of oil withdrawn. It was maintained that the withdrawal should be uniform per well through the field to prevent dissipation of pressure.

ROYAL DUTCH REPORT DEPLORES OIL DISCORD

NEW YORK, May 31.—World co-operation, rather than "nationalistic antagonism," is required to put the petroleum industry back on a firm footing, says the annual report of the Royal Dutch company for the past year, copies of which have just been received in this country.

"The causes of the present world crisis," the report says, "have already been studied so thoroughly that we need not discuss them here. The tragedy of the present situation is that, although the production capacity is greater and cheaper than it has ever been and the world should therefore be richer than ever before, in reality everyone is becoming poorer and poorer and the production capacity is not being utilized. The explanation of this deplorable state of affairs is to be sought in the total lack of international co-operation.

"Unemployment and unrentability of invested capital lead to unbalanced budgets and wholesale impoverishment of all civilized countries, and the result is that the governments cannot desist from intervening in the production process, being forced by circumstances to interfere with industry. We need not quote instances of such interference; they are all too well known. The natural development is that gradually governments and not the owners of the industry will have the main voice in business. This leads inevitably to a management which from a business point of view cannot be but inefficient and bureaucratic.

"Today there are instances where enormous sums of money are being spent by different countries on protection of some particular industry; admittedly this protection is being given with the object of increasing employment, but apparently not a thought is being given to the question of how that money could best be spent, and whether its expenditure could better be used in some other direction, resulting in a greater measure of employment and a lesser measure of chaotic industrial conditions.

"This is the wrong division of the world's production process; the industries of each country are developed for that particular country alone, and instead of promoting international co-operation this can only lead to nationalistic antagonism."

Oliver Answers Opposition to Program

Plan for Stabilization of Industry Should Result in the Reduction of Governmental Supervision

By Earl Oliver

In presenting to The Oil and Gas Journal readers replies to Mr. Rowley's request for comments on the proposed stabilization program described in the issue of April 21, we shall present them in so far as is practicable free from our own comment. Exceptions will be made to that principle where the replies clearly indicate a misconception of the proposal, or where to leave a criticism go unchallenged might imply no answer is possible. A full, free and frank discussion of all points at issue is desirable, but we hope to maintain this interchange of opinion that will take place in the columns of The Oil and Gas Journal on the plane of an intelligent analysis rather than as a public argument.

In order, however, to develop as early as possible a public understanding of the issues that are involved, we have selected for first presentation the reply that most completely sets out the opposition viewpoint and shall comment on it at length. The author requests that his name and company connection be withheld. His letter follows:

"Mr. Andrew M. Rowley, Managing Editor,
"The Oil and Gas Journal,
"Tulsa, Oklahoma.

"Dear Mr. Rowley:

"You have sent me an advance proof of an article by Mr. Earl Oliver, entitled Oil Industry's Problems and Remedies, with the request that I comment on the article. You will understand, of course, that my comments are my personal ideas, and that I in no way presume to express the policy of the Blank Company in what I am about to say.

"Mr. Oliver is a good friend of mine. We have discussed this general subject repeatedly during the past two years. While I disagree fundamentally with his ideas, it should be understood that I have the highest respect for his ability, earnestness, and desire to improve conditions in the petroleum industry.

"As I see it, the article is based on three fundamental mistakes: First, the article assumes the discoverer of oil has no greater right to the oil in the pool than have the owners who may now profit by his discovery. Second, the article assumes that the volume of oil under each tract of land in a pool can be determined with substantial equity long before the oil has been produced. Third, the article assumes that the oil in the ground can be allotted to the various royalty owners, and production can be controlled to meet the market demand with profit to the industry without increased governmental supervision.

Discovery Rights

"Neither in law nor in equity is there any reason for destroying the discovery rights. Certainly not one wildcat well in ten produces oil. The hardy pioneer who risks his funds in drilling for oil is entitled to the discoverer's reward. Further, if he is deprived of this reward, he cannot continue drilling wildcat wells. All of his dry holes are failures. The rewards of his successes are shared equally with those who contributed nothing to the venture. If we are to continue to discover oil fields, there must be discovery rights for the wildcatter.

"No method has been suggested by which the amount of oil underlying individual tracts can be determined at any time in the history of the pool. As an example, the Oklahoma City Pool was discovered in December, 1928. Any attempt within a year of that date to allocate the oil in the pool to the various tracts would have ignored the most prolific part of the pool which is the Wilcox sand area. Even today, when 800 wells have been drilled, there is a very wide discrepancy between the estimates of equally competent engineers on the amount of oil which will be obtained from presently developed tracts. There are at least 1,000 acres of possibly productive land on which no competent engineer would even guess whether oil production will exceed 10,000 bbls.

"Any program of allotting the oil in the ground to the surface

PROGRAM PROPOSED FOR STABILIZATION OF PETROLEUM INDUSTRY

1. That each landowner or his assigns is entitled to an amount of oil and/or gas from the common reservoir equivalent to the extractable oil and/or gas contained in his land, and should be protected in the enjoyment of that right.

2. That the pressure, or force of expulsion, contained in the reservoir is a common attribute of the reservoir and cannot be utilized to its greatest advantage except as it is treated and controlled as a single combined force. It should be conserved to the common interest of the several owners, and its dissipation should not be permitted except as it is efficiently utilized in driving oil and gas from the reservoir rock to the point of extraction. That the pool should be so developed and operated as to effectively utilize this force and promote most complete extraction at a minimum of cost, conserving the forces native to the reservoir to that end, with each owner entitled to his ratable share of oil and gas from the common reservoir according to the standard set out in principle No. 1 and made available to him at a time and in quantities consistent with his needs, in so far as the same can be safely and equitably done within the limit of the known reserves and available facilities and the right to a like degree of enjoyment of them by other owners in the same pool.

3. That during periods of general overproduction, the State in order to prevent waste and/or to protect the respective owners as per principles No. 1 and No. 2 above, should determine from time to time the maximum amount of oil and gas that is to be produced within the state and to that end should limit the production in any pool to not exceed the market demand for oil therein.

4. That an interstate compact in harmony with the proposal of Secretary Wilbur be enacted to promote unity of action and uniform practices among the several oil-producing states, to negotiate for world conservation methods so that floods of foreign oil shall not be thrown into competition with United States domestic production under conditions that are injurious to all parties concerned and to provide federal co-operation in helping to stabilize the oil industry.

5. That the necessary state and federal laws should be enacted or amended to promote and permit general application of the above principles.

6. That a planning committee composed of men selected from all factions of the oil industry and headed by a nationally known figure from outside the industry qualified to lead an industrial reconstruction movement and in whose judgment and loyalty to the public interest the various branches of the industry and the consuming public have confidence, should be set up to formulate and promote ways and means of establishing the principles above defined. Naturally that planning committee should include representative leaders of the various conflicting groups of a type that might draw together into united action all those conflicting factions.

The above principles were worded as follows in the article of April 21, to which the replies were addressed.

10. *What should be the chief characteristics of these changed laws?*

(a) They should be directed toward efficient development and production practices, not only in the public welfare but that no one owner shall by his method injure another owner.

(b) They should substitute for the "capture theory" in oil and gas, regulatory action in development and operation that would have the same practical results as would "ownership in place" strictly applied.

(c) They should protect the small owner against injustice or elimination.

(d) They should protect the consuming public against exploitation in price or waste of product.

(e) They should provide for restricting production to market demand as estimated from time to time by some governmental agency—preferably by an interstate compact organization also authorized to negotiate for foreign restrictions (as per Secretary Wilbur's proposal).

33. *How, then, can this great educational and legislative program be most effectively promoted?*

By creating a central committee or organization that will gradually draw together into a united effort all the organizations named in questions 23 to 29, inclusive, that are willing to promote this movement, or such members of those organizations as favor the movement when the organization itself cannot join in promoting it, because of divided sentiment among its membership. Stabilizing the petroleum industry is of sufficient consequence to justify taking whatever reasonable means will most effectively accomplish that end.

owner, regardless of the surface owner's attempts to secure that oil, places a premium upon delay in development. If a man fails to develop his tract, and his neighbor produces too much oil, the slow operator presumably secures the oil by paying his share of the development and lifting cost. If the diligent operator drills dry holes while attempting to extend the pool, the loss is his. Obviously, this is inequitable.

Area Included in Unit

"If Mr. Oliver's program includes compulsory unitization, who shall determine the area to be included within the unit? If the unit embraces nonproductive territory, how can we recover from the scattered royalty owners and the perhaps irresponsible operators the money which was paid them as representing their share of oil to be produced from their property? If, on the other hand, one assumes the gross receipts from a pool are to be impounded and distributed after the pool has been exhausted, then it will become necessary to set up a vast financial structure to receive, invest and account for the funds received from the development of the pool. Suppose all the receipts from the Oklahoma City Pool had been deposited with some trust company for investment pending a determination of the relative interests of thousands of operators and royalty owners in the area. The depreciation in all investments over the past three years would have resulted in tremendous losses. If the trust company were called upon to make settlement today, the trust company might be insolvent because it could not liquidate the investment on the present market.

"Any program of compulsory unitization involves interference by state officials. Some judge or commission must determine the relative rights of the owners in a pool. If competent, honest engineers cannot make such a determination, how can a judge, inexperienced in the petroleum industry, be expected to separate the false from the true testimony which is offered to him? How can a state official be more accurate than competent engineers who honestly differ, and who do not have the necessary fundamental data for determining the facts?

"Mr. Oliver's program involves a tremendous increase in governmental interference in the petroleum industry in spite of his statement in Paragraph 9. Paragraph 10 presents his platform. It calls for regulation of development, regulation of operation, protection of the public against high prices, restriction of production to market demands, interstate agreements regarding production, and an organization negotiating for foreign restrictions. At present, no governmental body is attempting to regulate price. Methods of operation and development programs have only been slightly affected by governmental regulations. If the government is to decide the appropriate price for oil products, the time and place for drilling, and the methods of production, we have completely communized our industry.

Question of Setting Price

"As a practical matter, we must recognize that if the government attempts to regulate production and price, any political government will establish a price which is favorable to the consumers rather than to the producers. There are more consumer votes than there are producer votes. A political government inevitably caters to the largest number of votes.

"Mr. Oliver's program will lead to the ruin of the petroleum industry in precisely the same way that governmental control has ruined the railroads. Mr. Oliver's program is Socialism in its clearest definition. It would destroy freedom of choice on the part of the owners of property, would eliminate independent action in the petroleum industry and would place the entire petroleum industry under the control of political forces which would be responsible to popular vote rather than to economic laws. Accordingly, I feel that Mr Oliver's program is most unfortunate. While he is entitled to present his ideas to the public in a free country, I hope that The Oil and Gas Journal will not support his program and so throw its weight in favor of Socialism and the complete governmental control of our business."

Opposition voiced in the letter is based on the arguments:

1. That the program ignores discovery rights.

2. That the relative volume of oil in each tract cannot be determined with substantial equity.

3. That the program would require increased governmental supervision.

Commenting on each in its respective order:

1. *Discovery right.* In so far as we can learn or observe, there is no such thing as "discovery right" either in oil and gas law or oil field practice. No doubt this is a reference to the right of capture, but the right of capture more frequently operates to the detriment of the wildcatter and the discoverer of the new pool than it operates to his benefit. The wildcatter in no manner depends on his ability to drain oil from under his neighbor to pay for his risk taken. On the contrary it is his invariable practice to "block up" sufficient acreage that if his test results in a discovery he has, or hopes to have, oil within his own lands to pay for the chance taken. Frequently indeed this right to capture prevents the wildcatter from blocking sufficient acreage to justify him in drilling his test and thus defeats his purpose. Too many owners "sit tight," refusing either to lease or co-operate in drilling the test, but hold their acreage with a knowledge that if the wildcatter is successful in discovering oil that their own acreage will be increased in value without cost to themselves. The only advantage the discoverer has is a slight start in producing from the common pool before others get started, but any advantage he derives from that as compared to the disadvantage he suffers from the expense incident to protecting his lines from offsets is negligible. The discovery well is generally located on a large block remote from boundary lines so that the discoverer does not drain from his neighbor during that short interval. Furthermore, transportation facilities are inadequate during that period to permit him to take out and dispose of much oil. We believe the statement can be made unequivocally that the right of capture, misnamed discovery right in the above letter, operates to the detriment of the wildcatter and the discoverer more frequently than it operates to his advantage.

Determining the Volume of Oil

2. *Can the relative volume of oil in each tract be determined with substantial equity to all parties concerned?* To assemble evidence on this point the writer, one year ago, as chairman of the A.I.M.E. study of unit operation, addressed this inquiry to a considerable number of well-known petroleum engineers, giving to them the standard set for us by the lawyers, which is that it "need not be determined with mathematical accuracy but with reasonable justice to all concerned" and asking them to indicate the procedure by which they would make the determination provided their reply is in the affirmative.

Most of the replies were printed in The Oil and Gas Journal of October 9, 1931, and all are printed in Transactions A.I.M.E. Petroleum Division, 1932. Reference is made to them. With two exceptions the replies expressed affirmative opinions, and the doubts expressed in the two exceptions were directed more toward certain other questions than the "ability to determine relative acreage content with substantial equity."

These replies, printed in the A.I.M.E. Transactions, were from:

C. E. Beecher, production engineer, the Empire Co., Bartlesville, Okla.

Warner Clark, assistant general manager, production department, Standard Oil Co. of California, San Francisco.

David Donoghue, consulting geologist and engineer, Fort Worth, Tex.

H. C. Fowler, U. S. Bureau of Mines, Washington, D. C.

E. H. Griswold, petroleum engineer, Continental Oil Co., Ponca City, Okla.

Joseph Jensen, petroleum engineer, Associated Oil Co., Los Angeles, Calif.

F. H. Lahee, chief geologist, Sun Oil Co., Dallas, Tex.

Marvin Lee, consulting geologist, Wichita, Kans.

Ben E. Lindsly, senior petroleum engineer, U. S. Bureau of Mines, Bartlesville, Okla.

A. F. Melcher, consulting engineer, Tulsa, Okla.

(Continued on Next Page)

Oliver Answers Opposition to Program

Plan for Stabilization of Industry Should Result in the Reduction of Governmental Supervision

By Earl Oliver

In presenting to The Oil and Gas Journal readers replies to Mr. Rowley's request for comments on the proposed stabilization program described in the issue of April 21, we shall present them in so far as is practicable free from our own comment. Exceptions will be made to that principle where the replies clearly indicate a misconception of the proposal, or where to leave a criticism go unchallenged might imply no answer is possible. A full, free and frank discussion of all points at issue is desirable, but we hope to maintain this interchange of opinion that will take place in the columns of The Oil and Gas Journal on the plane of an intelligent analysis rather than as a public argument.

In order, however, to develop as early as possible a public understanding of the issues that are involved, we have selected for first presentation the reply that most completely sets out the opposition viewpoint and shall comment on it at length. The author requests that his name and company connection be withheld. His letter follows:

"Mr. Andrew M. Rowley, Managing Editor,
"The Oil and Gas Journal,
"Tulsa, Oklahoma.

"Dear Mr. Rowley:

"You have sent me an advance proof of an article by Mr. Earl Oliver, entitled Oil Industry's Problems and Remedies, with the request that I comment on the article. You will understand, of course, that my comments are my personal ideas, and that I in no way presume to express the policy of the Blank Company in what I am about to say.

"Mr. Oliver is a good friend of mine. We have discussed this general subject repeatedly during the past two years. While I disagree fundamentally with his ideas, it should be understood that I have the highest respect for his ability, earnestness, and desire to improve conditions in the petroleum industry.

"As I see it, the article is based on three fundamental mistakes: First, the article assumes the discoverer of oil has no greater right to the oil in the pool than have the owners who may now profit by his discovery. Second, the article assumes that the volume of oil under each tract of land in a pool can be determined with substantial equity long before the oil has been produced. Third, the article assumes that the oil in the ground can be allotted to the various royalty owners, and production can be controlled to meet the market demand with profit to the industry without increased governmental supervision.

Discovery Rights

"Neither in law nor in equity is there any reason for destroying the discovery rights. Certainly not one wildcat well in ten produces oil. The hardy pioneer who risks his funds in drilling for oil is entitled to the discoverer's reward. Further, if he is deprived of this reward, he cannot continue drilling wildcat wells. All of his dry holes are failures. The rewards of his successes are shared equally with those who contributed nothing to the venture. If we are to continue to discover oil fields, there must be discovery rights for the wildcatter.

"No method has been suggested by which the amount of oil underlying individual tracts can be determined at any time in the history of the pool. As an example, the Oklahoma City Pool was discovered in December, 1928. Any attempt within a year of that date to allocate the oil in the pool to the various tracts would have ignored the most prolific part of the pool which is the Wilcox sand area. Even today, when 800 wells have been drilled, there is a very wide discrepancy between the estimates of equally competent engineers on the amount of oil which will be obtained from presently developed tracts. There are at least 1,000 acres of possibly productive land on which no competent engineer would even guess whether oil production will exceed 10,000 bbls.

"Any program of allotting the oil in the ground to the surface

PROGRAM PROPOSED FOR STABILIZATION OF PETROLEUM INDUSTRY

1. That each landowner or his assigns is entitled to an amount of oil and/or gas from the common reservoir equivalent to the extractable oil and/or gas contained in his land, and should be protected in the enjoyment of that right.

2. That the pressure, or force of expulsion, contained in the reservoir is a common attribute of the reservoir and cannot be utilized to its greatest advantage except as it is treated and controlled as a single combined force. It should be conserved to the common interest of the several owners, and its dissipation should not be permitted except as it is efficiently utilized in driving oil and gas from the reservoir rock to the point of extraction. That the pool should be so developed and operated as to effectively utilize this force and promote most complete extraction at a minimum of cost, conserving the forces native to the reservoir to that end, with each owner entitled to his ratable share of oil and gas from the common reservoir according to the standard set out in principle No. 1 and made available to him at a time and in quantities consistent with his needs, in so far as the same can be safely and equitably done within the limit of the known reserves and available facilities and the right to a like degree of enjoyment of them by other owners in the same pool.

3. That during periods of general overproduction, the State in order to prevent waste and/or to protect the respective owners as per principles No. 1 and No. 2 above, should determine from time to time the maximum amount of oil and gas that is to be produced within the state and to that end should limit the production in any pool to not exceed the market demand for oil therein.

4. That an interstate compact in harmony with the proposal of Secretary Wilbur be enacted to promote unity of action and uniform practices among the several oil-producing states, to negotiate for world conservation methods so that floods of foreign oil shall not be thrown into competition with United States domestic production under conditions that are injurious to all parties concerned and to provide federal co-operation in helping to stabilize the oil industry.

5. That the necessary state and federal laws should be enacted or amended to promote and permit general application of the above principles.

6. That a planning committee composed of men selected from all factions of the oil industry and headed by a nationally known figure from outside the industry qualified to lead an industrial reconstruction movement and in whose judgment and loyalty to the public interest the various branches of the industry and the consuming public have confidence, should be set up to formulate and promote ways and means of establishing the principles above defined. Naturally that planning committee should include representative leaders of the various conflicting groups of a type that might draw together into united action all those conflicting factions.

The above principles were worded as follows in the article of April 21, to which the replies were addressed.

10. *What should be the chief characteristics of these changed laws?*

(a) They should be directed toward efficient development and production practices, not only in the public welfare but that no one owner shall by his method injure another owner.

(b) They should substitute for the "capture theory" in oil and gas, regulatory action in development and operation that would have the same practical results as would "ownership in place" strictly applied.

(c) They should protect the small owner against injustice or elimination.

(d) They should protect the consuming public against exploitation in price or waste of product.

(e) They should provide for restricting production to market demand as estimated from time to time by some governmental agency—preferably by an interstate compact organization also authorized to negotiate for foreign restrictions (as per Secretary Wilbur's proposal).

33. *How, then, can this great educational and legislative program be most effectively promoted?*

By creating a central committee or organization that will gradually draw together into a united effort all the organizations named in questions 23 to 29, inclusive, that are willing to promote this movement, or such members of those organizations as favor the movement when the organization itself cannot join in promoting it, because of divided sentiment among its membership. Stabilizing the petroleum industry is of sufficient consequence to justify taking whatever reasonable means will most effectively accomplish that end.

owner, regardless of the surface owner's attempts to secure that oil, places a premium upon delay in development. If a man fails to develop his tract, and his neighbor produces too much oil, the slow operator presumably secures the oil by paying his share of the development and lifting cost. If the diligent operator drills dry holes while attempting to extend the pool, the loss is his. Obviously, this is inequitable.

Area Included in Unit

"If Mr. Oliver's program includes compulsory unitization, who shall determine the area to be included within the unit? If the unit embraces nonproductive territory, how can we recover from the scattered royalty owners and the perhaps irresponsible operators the money which was paid them as representing their share of oil to be produced from their property? If, on the other hand, one assumes the gross receipts from a pool are to be impounded and distributed after the pool has been exhausted, then it will become necessary to set up a vast financial structure to receive, invest and account for the funds received from the development of the pool. Suppose all the receipts from the Oklahoma City Pool had been deposited with some trust company for investment pending a determination of the relative interests of thousands of operators and royalty owners in the area. The depreciation in all investments over the past three years would have resulted in tremendous losses. If the trust company were called upon to make settlement today, the trust company might be insolvent because it could not liquidate the investment on the present market.

"Any program of compulsory unitization involves interference by state officials. Some judge or commission must determine the relative rights of the owners in a pool. If competent, honest engineers cannot make such a determination, how can a judge, inexperienced in the petroleum industry, be expected to separate the false from the true testimony which is offered to him? How can a state official be more accurate than competent engineers who honestly differ, and who do not have the necessary fundamental data for determining the facts?

"Mr. Oliver's program involves a tremendous increase in governmental interference in the petroleum industry in spite of his statement in Paragraph 9. Paragraph 10 presents his platform. It calls for regulation of development, regulation of operation, protection of the public against high prices, restriction of production to market demands, interstate agreements regarding production, and an organization negotiating for foreign restrictions. At present, no governmental body is attempting to regulate price. Methods of operation and development programs have only been slightly affected by governmental regulations. If the government is to decide the appropriate price for oil products, the time and place for drilling, and the methods of production, we have completely communized our industry.

Question of Setting Price

"As a practical matter, we must recognize that if the government attempts to regulate production and price, any political government will establish a price which is favorable to the consumers rather than to the producers. There are more consumer votes than there are producer votes. A political government inevitably caters to the largest number of votes.

"Mr. Oliver's program will lead to the ruin of the petroleum industry in precisely the same way that governmental control has ruined the railroads. Mr. Oliver's program is Socialism in its clearest definition. It would destroy freedom of choice on the part of the owners of property, would eliminate independent action in the petroleum industry and would place the entire petroleum industry under the control of political forces which would be responsible to popular vote rather than to economic laws. Accordingly, I feel that Mr Oliver's program is most unfortunate. While he is entitled to present his ideas to the public in a free country, I hope that The Oil and Gas Journal will not support his program and so throw its weight in favor of Socialism and the complete governmental control of our business."

Opposition voiced in the letter is based on the arguments:

1. That the program ignores discovery rights.

2. That the relative volume of oil in each tract cannot be determined with substantial equity.

3. That the program would require increased governmental supervision.

Commenting on each in its respective order:

1. *Discovery right.* In so far as we can learn or observe, there is no such thing as "discovery right" either in oil and gas law or oil field practice. No doubt this is a reference to the right of capture, but the right of capture more frequently operates to the detriment of the wildcatter and the discoverer of the new pool than it operates to his benefit. The wildcatter in no manner depends on his ability to drain oil from under his neighbor to pay for his risk taken. On the contrary it is his invariable practice to "block up" sufficient acreage that if his test results in a discovery he has, or hopes to have, oil within his own lands to pay for the chance taken. Frequently indeed this right to capture prevents the wildcatter from blocking sufficient acreage to justify him in drilling his test and thus defeats his purpose. Too many owners "sit tight," refusing either to lease or co-operate in drilling the test, but hold their acreage with a knowledge that if the wildcatter is successful in discovering oil that their own acreage will be increased in value without cost to themselves. The only advantage the discoverer has is a slight start in producing from the common pool before others get started, but any advantage he derives from that as compared to the disadvantage he suffers from the expense incident to protecting his lines from offsets is negligible. The discovery well is generally located on a large block remote from boundary lines so that the discoverer does not drain from his neighbor during that short interval. Furthermore, transportation facilities are inadequate during that period to permit him to take out and dispose of much oil. We believe the statement can be made unequivocally that the right of capture, misnamed discovery right in the above letter, operates to the detriment of the wildcatter and the discoverer more frequently than it operates to his advantage.

Determining the Volume of Oil

2. *Can the relative volume of oil in each tract be determined with substantial equity to all parties concerned?* To assemble evidence on this point the writer, one year ago, as chairman of the A.I.M.E. study of unit operation, addressed this inquiry to a considerable number of well-known petroleum engineers, giving to them the standard set for us by the lawyers, which is that it "need not be determined with mathematical accuracy but with reasonable justice to all concerned" and asking them to indicate the procedure by which they would make the determination provided their reply is in the affirmative.

Most of the replies were printed in The Oil and Gas Journal of October 9, 1931, and all are printed in Transactions A.I.M.E. Petroleum Division, 1932. Reference is made to them. With two exceptions the replies expressed affirmative opinions, and the doubts expressed in the two exceptions were directed more toward certain other questions than the "ability to determine relative acreage content with substantial equity."

These replies, printed in the A.I.M.E. Transactions, were from:

C. E. Beecher, production engineer, the Empire Co., Bartlesville, Okla.

Warner Clark, assistant general manager, production department, Standard Oil Co. of California, San Francisco.

David Donoghue, consulting geologist and engineer, Fort Worth, Tex.

H. C. Fowler, U. S. Bureau of Mines, Washington, D. C.

E. H. Griswold, petroleum engineer, Continental Oil Co., Ponca City, Okla.

Joseph Jensen, petroleum engineer, Associated Oil Co., Los Angeles, Calif.

F. H. Lahee, chief geologist, Sun Oil Co., Dallas, Tex.

Marvin Lee, consulting geologist, Wichita, Kans.

Ben E. Lindsly, senior petroleum engineer, U. S. Bureau of Mines, Bartlesville, Okla.

A. F. Melcher, consulting engineer, Tulsa, Okla.

(Continued on Next Page)

Joseph E. Pogue, economist, 43 Fifth Avenue, New York City.

Wallace Pratt, geologist, vice president Humble Oil & Refining Co., Houston, Tex.

A. C. Rubel, petroleum engineer, Union Oil Co. of California, Los Angeles, Calif.

A. C. Smith, assistant manager of production, North Texas Division, The Texas Company, Wichita Falls, Tex.

E. A. Stephenson, professor of petroleum engineering, Missouri School of Mines, Rolla, Mo.

V. H. Wilhelm, petroleum engineer, The Texas Company, Los Angeles, Calif.

J. B. Umpleby, consulting geologist and engineer, Oklahoma City, Okla.

Engineers Believe It Can Be Done

These replies demonstrate that engineers generally believe methods can be devised whereby the relative content of adjacent tracts in a common pool can be determined with justice to all concerned. To this time, there has been no great need for this information, but if developing it becomes important, engineers will soon evolve methods for doing so sufficiently close to do substantial justice to all. As better methods are found from time to time they can and will be applied.

The Oklahoma City Pool used as an illustration by the author of the letter quoted was not developed on this principle or with that purpose in mind, consequently the fact that there are "at least 1,000 acres of possibly productive land on which no competent engineer would even guess whether oil production will exceed 10,000 bbls." is not pertinent. Had securing this information been set as an objective for the engineers, none familiar with the advances of engineering skill would deem it impossible of accomplishment.

The author of the objecting letter asks many pertinent questions about details of operations. While answers and methods satisfactory to engineers consulted have been evolved so that we are convinced none of these problems raised is impossible of satisfactory solution, yet we believe the movement can be served best by delaying crystallization of opinion regarding details until the same are considered and passed upon by the proposed planning committee. Of this we may be assured—if the principles are sound and public opinion supports them, there will be no difficulty in evolving details of procedure for putting them into execution.

Should Mean Less Supervision

3. *Will adoption of the proposed program mean increased governmental supervision?* The answer to that is that it all depends upon the spirit in which the problem is faced. If the industry will get back of the program in a reasonably harmonious manner there is no reason why it should not result in a reduction of governmental supervision. The Van, Yates and Kettleman Hills Pools are by no means perfect in operation, but they are approaches toward the objective of the program. Greater protection to the minority interests and royalty owner will be evolved than occurs in these instances. But the amount of governmental supervision required by these three pools is much less than is required in other pools of like importance operated under the old competitive system such as Oklahoma City and East Texas.

Under suitable arrangements committees representing the owners would do what government is now called upon to do in the two pools named. If, however, every step ahead toward improved operating methods can come only as a result of struggles in legislative bodies between factions of the industry such as occurred in Texas and California, then it is quite likely indeed that the oil industry will end up under complete government operation. Undoubtedly the tendency is toward a demand for better operating methods. If the conflicting factions of the oil industry cannot agree on them, then the inevitable tendency will be for legislative bodies to try their hand with results that are not pleasant to contemplate, as we have seen them do in Texas and California. Adoption of a well considered program evolved in the industry but fair and satisfactory to all its factions and also to the consuming public is the only thing that will save the oil industry from a degree of government control that no one in government now contemplates with favor.

The writer of the above quoted opposition letter imputes to subdivision (d) of Paragraph 10 in the article of April 21 a meaning not intended and we think not justified. Undoubtedly in any regulation of supply the consuming public must be protected against restriction that will unduly increase price. Price and supply are related. The consuming public is not benefited by producing 5,000,000 bbls. per day, or even 2,500,000 bbls., when only 2,000,000 bbls. are needed. On the other hand, it must be protected against any possible restriction to 1,500,000 bbls. when 2,000,000 bbls. are needed. But any governmental fixing of price in the sense suggested by the writer of the letter is entirely outside the proposal of the program.

We shall not attempt to discuss the last paragraph of the letter. That is left to the judgment of the reader as perhaps we might well have left the entire letter. But it is an excellent presentation by an able exponent of the opposition argument to the proposed program—and, we submit, if it does not convince the reader the proposed program is unsound, then he may rest assured there is little chance he may find other arguments still more convincing.

This we know: The American oil industry faces disaster unless constructive stabilization methods are applied. The question is whether these methods shall be worked out in quiet deliberative conferences by students and leaders of the industry or whether they shall be evolved in the stress and turmoil of legislative bodies. A broad politico-economic forward movement in the oil industry is on. Objectors cannot stop it, they can only confuse the issue and delay it for a time, but it inevitably moves forward. Shall its direction be planned intelligently, or shall it be permitted to degenerate into a destructive, undirected flood forced along by panic and prejudice? The oil industry cannot avoid legislation. Its own suffering members will lead in demanding it, as they have done. Who, then, shall plan it—students of the industry or mass meetings?

In the next article we plan to reproduce with little or no comment, the replies received from two executives, two lawyers, a petroleum economist and two educators; namely, Messrs. K. R. Kingsbury, R. C. Holmes, Robert E. Hardwicke, W. P. Z. German, Joseph Pogue, Lester C. Uren and C. M. Young.

GASOLINE CONSUMPTION BY STATES, MARCH, 1932

	Month of		3 months ending with	
	March, 1932	March, 1931	March, 1932	March, 1931
	gallons	gallons	gallons	gallons
Alabama	11,729,000	12,979,000	33,644,000	37,055,000
Arizona	6,332,000	6,355,000	17,243,000	17,561,000
Arkansas	8,177,000	8,511,000	27,321,000	30,385,000
California	115,761,000	127,605,000	318,552,000	335,802,000
Colorado	13,330,000	12,434,000	34,855,000	35,959,000
Connecticut	17,491,000	15,989,000	48,553,000	44,285,000
Delaware	3,975,000	2,726,000	8,161,000	7,626,000
District of Columbia	7,658,000	6,994,000	22,352,000	19,529,000
Florida	20,191,000	22,420,000	62,012,000	66,181,000
Georgia	17,031,000	17,106,000	50,116,000	49,971,000
Idaho	2,845,000	3,923,000	7,317,000	9,803,000
Illinois	69,881,000	68,772,000	206,375,000	202,342,000
Indiana	36,784,000	32,694,000	98,672,000	94,277,000
Iowa	26,428,000	32,609,000	71,520,000	87,826,000
Kentucky	11,856,000	12,037,000	35,130,000	35,564,000
Louisiana	13,629,000	14,069,000	40,386,000	41,122,000
Maine	5,396,000	4,838,000	15,705,000	13,154,000
Maryland	14,144,000	13,464,000	40,366,000	37,451,000
Massachusetts	39,876,000	37,962,000	109,547,000	102,534,000
Michigan	52,682,000	55,099,000	159,655,000	157,071,000
Minnesota	28,154,000	29,024,000	73,577,000	82,004,000
Mississippi	*7,934,000	8,519,000	*23,950,000	25,299,000
Missouri	29,353,000	31,141,000	92,925,000	99,650,000
Montana	4,202,000	5,539,000	10,378,000	13,890,000
Nebraska	16,937,000	17,307,000	49,161,000	51,336,000
Nevada	1,742,000	1,470,000	4,507,000	3,772,000
New Hampshire	3,714,000	3,316,000	10,465,000	9,056,000
New Jersey	52,053,000	50,701,000	150,298,000	140,276,000
New Mexico	3,625,000	3,797,000	10,109,000	10,813,000
New York	101,846,000	108,802,000	323,754,000	299,152,000
North Carolina	17,265,000	18,342,000	60,116,000	58,915,000
North Dakota	7,563,000	7,250,000	13,628,000	18,525,000
Ohio	72,227,000	69,165,000	195,036,000	199,288,000
Oklahoma	22,395,000	23,277,000	63,507,000	70,948,000
Oregon	15,293,000	12,674,000	35,781,000	34,004,000
Pennsylvania	78,126,000	72,009,000	231,948,000	215,633,000
Rhode Island	7,284,000	7,182,000	20,278,000	18,415,000
South Carolina	8,649,000	9,741,000	24,661,000	27,217,000
South Dakota	7,982,000	13,793,000	13,530,000	29,383,000
Tennessee	14,831,000	16,051,000	44,519,000	45,467,000
Texas	61,249,000	62,513,000	169,914,000	178,225,000
Utah	3,636,000	4,609,000	10,606,000	11,975,000
Vermont	2,414,000	2,139,000	6,694,000	6,067,000
Virginia	17,962,000	16,268,000	49,337,000	46,369,000
Washington	21,949,000	18,349,000	52,843,000	53,694,000
West Virginia	8,450,000	8,296,000	24,862,000	24,166,000
Wisconsin	26,510,000	35,148,000	73,019,000	87,745,000
Wyoming	2,286,000	2,457,000	5,904,000	6,792,000
Total	1,138,739,000	1,168,474,000	3,247,276,000	3,293,225,000
Daily average	36,734,000	37,693,000	35,684,000	36,591,000
Change from previous year:				
Total decrease	29,735,000	.....	45,949,000	.....
Percentage dec. in dly. av.	—2.54%	.....	—2.48%	.....

*Estimated.

Large Sums Spent to Improve Products

Buyers and Sellers of Oil Field and Refinery Equipment Should Keep in Mind Background of Years of Research

By Andrew M. Rowley

The meeting of the divisions of the American Petroleum Institute in Tulsa this week recalls the many sessions held at Colorado Springs of the committees on standardization of oil field equipment. Those meetings of the standardization committees of the Institute have always impressed the writer as being the most remarkable gatherings he ever attended. Committees often started work at 8 o'clock in the morning, remained in session until 12:30, reassembled at 1 or a little after; kept going until 6, and then, to fill out the day, held a night session from 8 o'clock until—well, I remember several I sat in that lasted until 1 o'clock in the morning.

The best engineering minds in the petroleum industry were members of those committees. Production engineers with a national reputation and engineers and executives of equipment concerns with a world-wide business attended those sessions and took an active part in the deliberations, discussions and in formulating recommendations. Those meetings were attended by about 200 men of the type mentioned. The meetings at Colorado Springs lasted one week and were held there each year for a number of years.

Cost Manufacturers Large Sums

The purpose of those meetings was the standardization of oil field equipment and the improvement of this equipment to meet each and every need of the oil industry. Recommendations adopted as a result of those meetings cost many manufacturers thousands of dollars. But the petroleum industry was given lines of equipment and supplies which could be depended upon absolutely to give the utmost in service, safety and convenience.

THE price-cutter is worse than a criminal. He is a fool. He not only pulls down the standing of his goods; he not only pulls down his competitors; he pulls down himself and his whole trade. He scuttles the ship in which he himself is afloat.

Nothing is so easy as to cut prices; and nothing is so hard as to get them back when once they have been pulled down. Any child can throw a glass of water on the floor, but all the wisest scientists in the world can't pick that water up.

Who gets the benefit of price-cutting? Nobody. The man who sells makes no net profit; and the man who buys soon finds himself getting an inferior article. No manufacturer can permanently keep up the standard of his goods if the price is persistently cut. Pretty soon he is compelled to use cheaper materials, and to cut down the wages of his workers.

The man who cuts prices puts up the sign: "This way to the junk-heap!" He admits his own failure as a salesman. He admits he has been defeated according to the Marquis of Queensbury rules of business. He admits he can not win by fighting fair. He brands himself as a hitter-below-the-belt. If the business world were dominated by price-cutters, there would be no business at all. Price-cutting, in fact, is not business any more than smallpox is health.

Whenever you see this sign on a price-cutter's store—"Going Out of Business"—you may be sure it is a lie. How can he go out of business when he never was IN?

(Reprinted through the courtesy of the Standard Oil Co. of Calif.)
(This comment, by Herbert N. Casson, originally appeared in the Standard Oil Bulletin, issue of October, 1914.)

It has not been so long since those meetings were held. Purchasing agents of oil companies, oil company executives who sent their engineers to attend the sessions, officials who attended themselves and manufacturers who gave of their time and money for attendance at the meetings and in changing over plants to make equipment embodying all the recommendations of the standardization committees—all of these must remember those meetings very distinctly.

Yet, it seems that the low price hysteria which has swept the country has made many forget. The panicky idea that we must get business regardless of cost or price seems to have pushed sane judgment aside for the time being. The vast sums of money spent by manufacturers of equipment and supplies for research and in engineering studies of the problems confronting the producing, refining and pipe line branches of the industry should mean something, yes, a whole lot, to every buyer and seller of oil field and refinery material.

Why Not Consider Background?

Manufacturers of oil field equipment know the money spent to attend the meetings of the standardization committees and the money spent for research and engineering studies was a good investment. And, more than anyone else, oil companies buying material and equipment from these manufacturers know the money was well spent because of the very great improvements made in all types of standard oil field and refinery requirements.

Then why should manufacturers lose sight of these things and enter into competition on a purely price basis with price cutters and firms who cannot possibly make equipment of the standard needed in the oil industry at the prices being quoted?

And why do purchasing agents and executives of oil companies forget this background and make price the one and only consideration in deals involving oil field and refinery equipment?

Many things the oil industry is doing today without much thought were deemed impossible just a few years ago. It would be impossible to drill wells to the depths now being reached; to get the large yields and high quality of products from refineries; and to transmit natural gas farther than 300 or 400 miles if great improvements had not been made in equipment manufactured for the oil and gas business. These improvements resulted from years of research and the expenditure of hundreds of thousands of dollars.

Low Prices Not a Bargain

It is my contention that when prices are cut as much as they have been in some deals of which I have been told, quality must suffer. The seller either is not giving the oil company the quality of product the oil company thinks it is getting or the manufacturer is simply taking a short cut to receivership for his business.

A number of oil companies have awakened to the fact low prices do not always constitute a good bargain. Equipment purchased from price cutters has failed to give satisfaction and the companies have been forced to go back to their old standbys and purchase the material they should have purchased in the first place.

Oil field operations are showing a substantial increase. Shelves of oil companies are depleted of supplies and new equipment must be purchased. Oil companies will save themselves a lot of trouble if they confine their purchases to firms with which they have done business in the past and to those they know are reliable and which manufacture a high quality product. Manufacturers, for their part, must set a reasonable price for their product, a price which will net a reasonable profit, and they must stick to that price, knowing that quality will prevail in the end and that oil company executives will realize the fallacy of paying out good money for material which will not stand up and do the work.

An evil of price cutting which manufacturers usually fail to consider is that price cutting does not always obtain the end for which it is employed. Frequently it not only fails to increase sales but, in many cases, actually decreases them. In a recent investigation by the Federal Trade Commision into resale maintenance the price appeal was found to have the tendency to decrease manufacturers' distribution, in the opinion of 53.3 per cent of those queried.

Five Per Cent Drop in Consumption

Federal Economics Committee Submits Estimates of Demand and Supply for Balance of Year. Less Crude Will Be Required

WASHINGTON, D. C., June 1.—As chairman of the Federal Oil Conservation Board, Secretary Wilbur of the Department of Interior today made public a report or survey just compiled by the board's volunteer committee on petroleum economics. The report treats of probable motor fuel and crude oil requirements for the period April 1 to December 31, 1932. Dr. John W. Frey of the Department of Commerce, chairman of the volunteer committee, will present the report upon the occasion of the mid-year meeting of the American Petroleum Institute at Tulsa on June 1. Serving with Doctor Frey on this committee were: Martin Van Couvering, petroleum engineer, Los Angeles; Howard Bennette, Western Petroleum Refiners Association, Tulsa; Clarel B. Mapes, Mid-Continent Oil and Gas Association, Tulsa; and Sidney A. Swensrud, Standard Oil Co. of Ohio, Cleveland.

The report addressed to Secretary Wilbur follows:

Text of Report

The volunteer committee on petroleum economics, in accordance with your request of April 6, has made a survey of the probable requirements for motor fuel and crude oil during the nine-month period, beginning April and ending December, 1932. The resulting report is based upon the indicated demand for motor fuel, and certain levels of motor fuel and crude oil production and stocks are suggested as a means of conservational and economic operation during the period.

It is estimated that the total demand for motor fuel will be 337,000,000 bbls., of which the domestic demand is estimated to be 307,500,000 bbls. and the export demand 29,500,000 bbls. The indicated decrease in domestic demand over the same period in 1931 is estimated to be 17,557,000 bbls. or 5.4 per cent, and the indicated decrease in export demand is estimated to be 4,832,000 bbls. or 14.1 per cent, resulting in an estimated decrease in total demand for motor fuel of 22,389,000 bbls. or 6.2 per cent.

In evaluating the probable domestic demand for motor fuel, it was concluded that the controlling factors were principally those of retrograding characteristics. From the best sources of information available, it was indicated that the average number of automotive units in use during 1932 would decrease approximately 1,000,000, a decline of over 4 per cent.

The general historical trend of the domestic demand for motor fuel, with seasonal factors corrected has been definitely downward for some time, this condition having been indicated even as early as 1929, when it became apparent that the rate of increase in domestic demand was decreasing. Since such a mathematical analysis of statistical history is only a by-product of the forces acting, it cannot be taken as an absolute factor, but if the indicated tendencies persist, it is reasonably certain that the average decline thus projected will approximate 3 per cent.

Motor Use Decline

The general unsatisfactory economic condition existing throughout the world presages much further curtailment in the use of both commercial and personal automotive units, and the committee was not unappreciative of the probability that the ratio of commercial units registered to the total units registered was considerably higher than the ratio of commercial units in use to the total units in use. With regard to the use of the personal units for pleasure and vacation purposes, the probability is that the average car owner will confine the use of his car to much shorter trips and to a less number of trips than has been the custom, and thus the usual summer peak in domestic consumption of motor fuel will be considerably lowered. While the committee was cognizant of increased use of six and eight-cylinder cars, it was concluded that the increase in demand for motor fuel due to this condition would be much more than offset by the generally curtailed use of the units themselves. This multiphase factor of the actual use of automotive units would therefore indicate a somewhat lower domestic demand for motor fuel than was primarily indicated by the estimated decline in total automotive units registered and by the statistical history of motor fuel consumption.

TABLE 1—MOTOR FUEL SUMMARY

	Last nine months, 1932 (Bbbls.)	Last nine months, 1931 (Bbls.)	Increase or decr. Bbls.	Increase or decr. %
DEMAND—				
Domestic	307,500,000	325,057,000	—17,557,000	— 5.4
Export*	29,500,000	34,332,000	— 4,832,000	—14.1
Total demand	337,000,000	359,389,000	—22,389,000	— 6.2
SUPPLY—				
Straightrun gasoline	152,850,000	171,343,000	—18,493,000	—10.8
Cracked gasoline	129,000,000	136,844,000	— 7,844,000	— 5.7
Nat. gasoline produced and run to stills	22,000,000	25,706,000	— 3,706,000	—14.4
Refinery production	303,850,000	333,893,000	—30,043,000	— 9.0
Other natural gasoline produced	5,000,000	5,441,000	— 441,000	— 8.1
Benzol	1,000,000	1,379,000	— 379,000	—27.5
Total production	309,850,000	340,713,000	—30,863,000	— 9.1
Supply from storage:				
Refinery stocks	15,220,000	8,767,000	+ 6,453,000	
Other stocks†	3,230,000	183,000	+ 3,047,000	
Total domestic supply	328,300,000	349,663,000	—21,363,000	— 6.1
Imports	8,700,000	9,726,000	— 1,026,000	—10.5
Total supply	337,000,000	359,389,000	—22,389,000	— 6.2

SUGGESTED LEVEL OF MOTOR FUEL STOCKS

	Refinery stocks (Bbls.)	Other stocks† (Bbls.)	Ttl. stocks (Bbls.)
March 31, 1932 (actual)	47,220,000	19,730,000	66,950,000
June 30, 1932	40,000,000	19,450,000	59,450,000
September 30, 1932	27,500,000	17,450,000	44,950,000
December 31, 1932	32,000,000	16,500,000	48,500,000

*Including shipments to noncontiguous territories. †"Other stocks" include motor fuel stocks in terminals, in transit, in pipe lines, and natural gasoline at refineries, at plants, and blends at plants.

TABLE 2—CRUDE OIL SUMMARY

	Last nine months, 1932 (Bbls.)	Last nine months, 1931 (Bbls.)	Increase or decr. Bbls.	Increase or decr. %
DEMAND—				
Crude runs to stills	622,000,000	685,426,000	—63,426,000	— 9.26
Crude used as such	10,000,000	13,441,000	— 3,441,000	—25.60
Domestic consumption	632,000,000	698,877,000	—66,877,000	— 9.57
Exports	20,500,000	20,331,000	+ 169,000	+ 0.83
Total demand	652,500,000	719,208,000	—66,708,000	— 9.28
SUPPLY:				
Domestic production*	611,875,000	654,500,000	—42,625,000	— 6.51
Imports	33,650,000	34,368,000	— 718,000	— 2.09
New supply	645,525,000	688,868,000	—43,343,000	— 6.29
Drawn from storage	6,975,000	30,340,000	—23,365,000	—77.01
Total supply	652,500,000	719,208,000	—66,708,000	— 9.28

*Daily average production 2,225,000 bbls. for last nine months—275 days.

The committee has concluded that the principal factors causing the export demand for motor fuel to assume a pronounced downward trend will continue in effect during the period under consideration, but that the rate of decline in exports will be reduced due to the fact that the causative factors of decline have almost exerted their full effect. The decreasing purchasing power of foreign consumers and the pressure of competition from foreign motor fuel producers, together with foreign agreements concerning the source of supply, will continue to be the major factors influencing a decline in export demand.

It is estimated that the imports of motor fuel will total 8,700,000 bbls., a decline of 1,026,000 bbls. or 10.5 per cent below the same period in 1931. The unusually heavy imports in the first months of the year 1932, which is in effect a translation of stocks from other countries to this, appears to have been stimulated by the possibility of an excise tax on imports. It is not, however, anticipated that the same rate of importation will persist through the year, for if an excise tax is not imposed, imports should be reduced to compensate for the heavier imports in the early part of the year. If an excise tax, distinctly restraining, is imposed, imports will automatically decline to a low level or cease.

Required Gasoline Supply

The required domestic supply of motor fuel, in line with the above considerations, is therefore estimated to be 328,300,000 bbls., a decrease of 21,363,000 bbls. or 6.11 per cent below the corresponding period in 1931.

The committee concluded that a net withdrawal of 18,450,000 bbls. from motor fuel stocks should be accomplished as of December 31, 1932, reducing such motor fuel stocks from the actual 66,950,000 bbls. in storage on March 31, 1932, to a level of 44,950,000 bbls. on October 31, 1932, and then increasing to a level of 48,500,000 bbls. at the end of the year. The committee has approximated the indications of the industry in respect to economic working stocks, and feels that all economic considerations warrant the above suggested stocks with the consequent net reduction from present levels.

The required production of motor fuel is therefore estimated to be 309,850,000 bbls., of which it is estimated the production of natural gasoline will provide 27,000,000 bbls., the production of benzol 1,000,000 bbls., and gasoline manufactured from crude oil 281,850,000 bbls. Of the above production of natural gasoline, the committee estimates that 22,000,000 bbls. will be blended at refineries, and therefore that the total production of refinery gasoline will be 303,850,000 bbls., a decline of 30,043,000 bbls. or 9 per cent below that of the same period in 1931.

Careful consideration has been given to the evident tendency of the refinery industry to produce motor fuel with high antiknock qualities, and it was concluded that this tendency will be stronger dur-

TABLE 3—ESTIMATE OF MOTOR FUEL AND CRUDE PETROLEUM REQUIREMENTS
April 1, 1932, to December 31, 1932—by Months
(Figures in thousands of barrels)

	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Last 9 months 1932*
MOTOR FUEL—										
Domestic demand	32,500	35,000	36,100	37,800	38,000	35,800	33,300	30,500	28,500	307,500
Export demand	3,800	3,400	3,300	3,400	3,400	3,200	3,100	3,000	2,900	29,500
Total demand	36,300	38,400	39,400	41,200	41,400	39,000	36,400	33,500	31,400	337,000
Imports	1,750	1,500	1,150	800	800	700	700	600	600	8,700
Required domestic supply	34,550	36,900	38,250	40,400	40,600	38,300	35,700	32,900	30,800	328,300
Change in stocks of motor fuel	—1,050	—2,400	—4,050	—5,100	—5,300	—4,100	—700	+1,200	+3,050	—18,450
Required domestic production	33,500	34,500	34,200	35,300	35,300	34,200	35,000	34,000	33,850	309,850
Production of natural gasoline	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	27,000
Production of benzol	125	125	125	125	100	100	100	100	100	1,000
Required production of gasoline from crude	30,375	31,375	31,075	32,175	32,200	31,100	31,900	30,900	30,750	281,850
Production of cracked gasoline	13,600	14,350	14,250	14,800	14,800	14,300	14,600	14,200	14,100	129,000
Production of straightrun gasoline	16,775	17,025	16,825	17,375	17,400	16,800	17,300	16,700	16,650	152,850
CRUDE OIL—										
Crude runs to stills	68,500	69,500	69,000	70,700	70,800	68,500	69,300	67,200	68,500	622,000
Crude used as such	1,100	1,200	1,100	1,100	1,100	1,000	1,200	1,100	1,100	10,000
Domestic consumption	69,600	70,700	70,100	71,800	71,900	69,500	70,500	68,300	69,600	632,000
Exports	2,850	2,300	2,350	2,400	2,400	2,200	2,200	2,000	1,800	20,500
Total demand	72,450	73,000	72,450	74,200	74,300	71,700	72,700	70,300	71,400	652,500
Imports	7,650	6,000	4,000	3,000	3,000	3,000	2,400	2,300	2,300	33,650
Total demand for domestic crude	64,800	67,000	68,450	71,200	71,300	68,700	70,300	68,000	69,100	618,850
Change in stocks	+1,950	+1,975	—1,700	—2,225	—2,325	—1,950	—1,325	—1,250	—125	—6,975
Production required	66,750	68,975	66,750	68,975	68,975	66,750	68,975	66,750	68,975	611,875
Daily average production required	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225

*April to December inclusive.

Let's welcome the "race for octane number" instead of cussing it

It keeps everybody on his toes

Dubbs refiners have nothing to worry about, no matter how high fashion carries anti-knock standards

Dubbs cracked gasoline can meet any standard the engine sets

Dubbs refiners can make high anti-knock gasoline from cheapest charging stocks at lowest cost

They can sell it at a profit

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

ing the remainder of 1932 than in past months and that greater relative yields of cracked gasoline will be realized during the period under consideration. In line with this conclusion, it is estimated that the production of cracked gasoline will approximate 46 per cent of the gasoline manufactured from crude oil run to stills and will total 129,000,000 bbls., a decrease of 7,844,000 bbls. or 5.7 per cent below the same period in the preceding year. Therefore the straightrun gasoline which will be produced will be 18,493,000 bbls. or 10.8 per cent less than in the same period in 1931 and will total 152,850,000 bbls.

To produce the above amount of straightrun gasoline, it is estimated that the required runs of crude oil to stills will total 622,000,000 bbls., and that the recovery ratio of straightrun gasoline will approximate 24.57 per cent. In comparison, the recovery ratio for the same period in 1931 was approximately 25 per cent but the committee concluded that the effect of the practice of cracking distillate and the production of "reformed" gasoline would cause the recovery ratio to be lower for the period under consideration. Therefore this estimate anticipates that, in comparison with the preceding year, there will be a decrease of 63,436,000 bbls. or 9.26 per cent in the amount of crude oil runs to stills.

Crude Oil Demand

It is estimated that crude oil used as such will decline 25.6 per cent, or 10,000,000 bbls. It is anticipated that the exports of crude will not change materially from the exports of the same period last year and will probably total slightly higher, amounting to 20,500,000 bbls. Thus the total demand for crude oil is estimated to be 652,500,000 bbls., a decrease of 66,708,000 bbls. or 9.28 per cent below that of the corresponding period in 1931.

In considering the imports of crude oil, the committee has approached its estimate in approximately the same manner that it did in studying the probable imports of motor fuel, with the added factor that whether or not an excise tax is imposed, the committee has no reason to believe that there is any justification for a continuance of imports of crude oil in the same relative magnitude as that which has been experienced in the past few months. Thus, the committee has estimated that the imports of crude oil will be 33,650,000 bbls., or approximately 5.15 per cent of the total required supply of crude oil.

The committee therefore estimates that the required domestic supply of crude petroleum will be 618,850,000 bbls., as compared with 684,840,000 bbls. required during the same period in 1931, a decrease of 65,990,000 bbls. or 9.64 per cent. This total amount will be required from production and storage, and will average approximately 2,250,000 bbls. per day over the period.

However, in studying the probable demand for this crude oil by months, it was apparent that during the period from April to June inclusive, the daily average demand would probably approach only 2,200,000 bbls. per day, while in the last quarter of the year, the period in which the anticipated developments are most problematical, the daily average requirements of domestic crude supply would approximate only the daily average computed for the entire period.

Accordingly, in the best interests of conservation and the economic welfare of the industry, this committee suggests that the oil industry adjust itself to an approximate production of crude oil averaging 2,225,000 bbls. daily for the entire nine-month period under consideration. If the fullest anticipations of demand for both motor fuel and crude oil, as now estimated by this committee, are realized, a reduction in crude oil stocks of 6,975,000 bbls. will be accomplished. If legislation now pending before Congress should lead to a reduction in imports of crude oil, it is suggested that daily average production not be changed from the suggested 2,225,000 bbls. per day, and that any added demand for domestic crude oil be met by withdrawals from storage during the balance of the year 1932. Any such likely reduction in stocks would be much less than the crude stock reductions of 1931.

In this report, the committee has not endeavored to prognosticate what the industry will actually do, but rather with appreciation of many factors of uncertain trend to suggest a sound plan of operation consonant with the best general welfare of the industry as a whole, the states in which petroleum is produced and refined, the national welfare and that of the consuming public generally.

TABLE 4—ESTIMATE OF REFINERY SHIPMENTS, STOCKS AND PRODUCTION OF REFINERY GASOLINE
April 1, 1932, to December 31, 1932—by Districts
(Figures in thousands of barrels)

	Shipments from refineries	Stocks of refinery gasoline* April 1, 1932	Dec. 31, 1932	Change in stocks	Refinery gasoline prod.	Natural gasoline blended at refineries	Prod. of cracked and straight-run gasoline	% Yield of total cracked and straight-run gasoline	Required runs of crude to stills
East Coast	54,000	17,876	15,400	—2,476	51,524	950	50,574	43.2	117,000
Appalachian	12,800	2,473	1,450	—1,023	11,777	300	11,477	48.8	23,500
Indiana, Illinois, Kentucky	49,000	8,353	6,750	—1,603	47,397	2,000	45,397	54.0	84,000
Oklahoma, Kansas, Missouri	45,000	5,595	3,950	—1,645	43,355	3,400	39,755	51.0	78,000
Texas inland	22,400	2,452	1,100	—1,352	21,048	2,550	18,498	46.5	39,800
Texas coastal	55,265	6,848	4,200	—2,648	52,617	2,600	50,017	46.1	108,500
Louisiana coastal	14,000	2,314	1,650	— 664	13,336	700	12,636	40.1	31,500
North Louisiana-Arkansas	6,700	430	350	— 80	6,620	1,000	5,620	38.8	14,500
Rocky Mountain	8,700	2,089	1,300	— 789	7,911	800	7,111	56.0	12,700
California	53,000	14,485	9,750	—4,735	48,265	7,500	40,765	36.2	112,500
Total United States	320,865	62,915	45,900	—17,015	303,850	22,000	281,850	45.3	622,000

*Includes stocks at refineries, at bulk terminals, in pipe lines, and gasoline in transit for territory east of California. California stocks also include stocks at sales distributing stations.

Proration of World Oil Sales Looms

Compromise Agreement at International Conference in New York Expected to Allot Soviet Definite Quotas of World's Gallonage

By A. E. Mockler

NEW YORK, May 31.—Proration of sales quotas on refined petroleum products on an international basis, somewhat similar to the plan pursued for the division of major markets in the United Kingdom between the major oil companies active in England and the Soviet oil trust in the price compact which recently expired, will be adopted as a means of stabilizing export petroleum markets if the claims advanced by Russian representatives can be reconciled with the views of American and European oil men, it was learned here at the conclusion of the first two weeks of the international oil conference. The meetings, held at the Waldorf-Astoria, are still closed sessions, with C. R. Arnott, president of Socony-Vacuum Corp., and J. A. Moffett, vice president of Standard Oil Co. (New Jersey), official spokesmen for the conference, still close-mouthed as to the actual plans under discussion. Any agreement arrived at for the parceling-out of world markets, however, will be exclusive of domestic United States markets, which are not affected by the negotiations.

American and British companies represented at the conferences have formed a committee to carry on the negotiations with the Soviet oil men as the official representatives of major oil companies in these countries. Mr. Arnott is chairman of the committee, the membership of which includes J. B. A. Kessler, joint managing director of the Royal Dutch-Shell group; R. I. Watson, managing director of Burmah Oil Co., Ltd.; W. Fraser, of Anglo-Persian Oil Co., Ltd.; Harold F. Sheets, vice president of Socony-Vacuum Corp.; and J. A. Moffett. In addition to the American companies represented at the conference, officials of Consolidated Oil Corp., Gulf Oil Corp., The Texas Corporation and Atlantic Refining Co., are participating in the discussions.

While the attitude of the Soviet representatives is still characterized as showing "a fine co-operative spirit," it is evident that the Russian oil men have very decided views as to the extent to which the Soviet oil trust is to participate in world oil markets, and considerable difficulty is being experienced in reconciling these views with those held by the other oil interests involved, notably the European companies. The conference is still endeavoring to straighten "fundamental points," and apparently a deadlock of at least minor proportions has been reached. In a statement issued on Friday, Mr. Arnott said: "We are considering things the Soviet representatives have said to us, and they are doing the same regarding proposals to us by them."

Soviet Balking

Unofficially, it is understood that the Soviet representatives have balked at the market allocations tendered them thus far by the conferees, and have advanced counterclaims which have been just as strongly disputed by some of the major companies involved. At the outset of the conference, it was indicated that an agreement would be sought entailing the sale by the Soviet export oil syndicate of stipulated quantities of gasoline and other refined products annually. These exports were to be taken by a pool made up of the principal world companies, and distributed in world markets on a prorata basis. The discussion of this plan reached the point where the subject of price was a major factor, with indications pointing to the adoption of the U. S. Gulf export quotations as the representative basis of the world price.

Later developments, however, have indicated that the Soviet is by no means willing to drop its ambitious plan for the creation of an important world marketing agency, taking in the major consuming countries, and that unless decided concessions are held out to Russia, the Soviet representatives will be inclined to hold out for the allocation of definite sales quotas, based on a fixed percentage of the total available gallonage, in principal consuming markets, with Soviet distributing agencies to continue the actual handling of the oil. This plan, involving as it does the costly duplication of existing distributing facilities, is being opposed by the British and American oil companies, who apparently fear the breakdown of the agreement with resultant intensification of demoralization in important marketing and consuming countries.

The compact between Russian Oil Products Co., Ltd., the Soviet marketing agency in Great Britain, and Anglo-American Oil, Shell, and other important British marketing concerns, whereby the Soviet was allotted a fixed proportion of the gallonage in the United Kingdom in return for an agreement for price maintenance, expired April 1 and up to the time of writing has not been renewed. It is believed in oil circles here that the Soviet oil trust is endeavoring to use the present international conference as a lever to force the increased sales quotas which it has demanded in the British market, and which thus far major companies operating in the United Kingdom have been unwilling to concede.

Can Adjust Deadlock

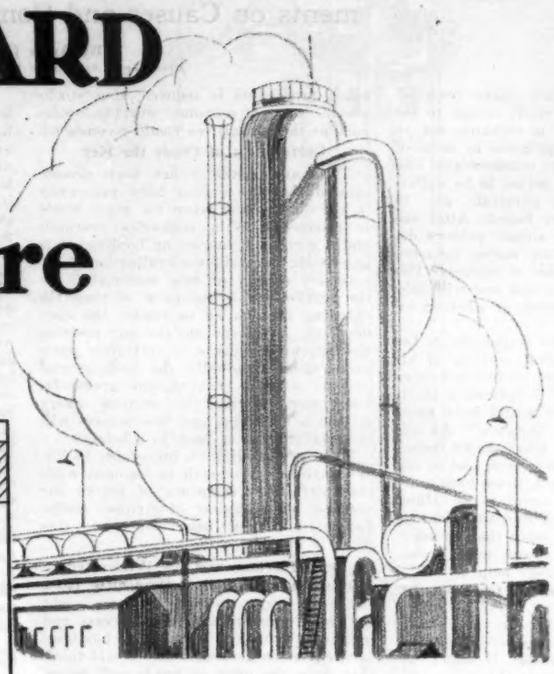
The current deadlock, it is believed, will be adjusted by an agreement on a compromise plan some time during the coming week, although there have been no official intimations that settlement of the problems confronting the conference is in sight at this time.

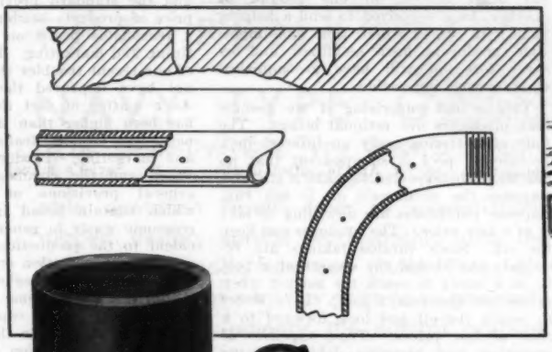
In some quarters, it is reported that the compromise plan, when announced, will show that the American and European companies guarantee the Soviet a market for the next 10 years for approximately 5,300,000 tons of Russian oil exports annually, this figure being based on the Soviet's actual petroleum export tonnage during 1931. In addition, it is predicted, the American-European group will guarantee to purchase additional quantities of refined petroleum from the Soviet if consumptive demands should show specified percentage increases during this period.

The belief that the conferences here will wind up with a tentative plan for allocation of world markets (exclusive of the United States) arrived at are strengthened by reports from abroad indicating that Soviet marketing agencies are planning further expansion in distributing facilities. Creation and constant development of foreign marketing subsidiaries, involving the establishment of marine bulk terminals and the building of wholesale and retail marketing divisions, are embodied in the basic plan for development of the Soviet oil industry, which includes foreign sales as an important component of its general plan for exploitation of home and export markets. The unexplained differences of opinion between the Soviet and the European and American conferees here, it is thought, hinges on this situation. During the early part of the meeting, when the belief that major world companies would purchase and distribute large quantities of Soviet refined products was given wide currency in market circles, the "accord" that American and European interests had arrived at was undoubtedly an agreement for such purchases and sales. The unwillingness of the Soviet to accept in its entirety the plan submitted by the other conferees, in logical sequence, was the presentation of its counterclaim for increased participation in world markets, and the deadlock now existing, for the solution of which an official "compromise" is now being sought, by the same logic, represents the unwillingness of the European and American representatives to accede to the Soviet request for both increased shares in foreign markets and continuance of the development of its own marketing operations as well.

While only a relatively few of the major American companies are participating in the conference directly, it is significant that these companies represent the more important factors in the membership of the now inactive petroleum export association, and successful culmination of the Soviet negotiations, it is believed, will be followed by a revival of the export group, giving to the remainder of the original group of major American companies participation in any plan which the conference here may decide upon.

A SAFEGUARD against high pressure hazards





NATIONAL SENTRY Tubing

High Pressure Equipment that will give warning of any effect of internal wear or chemical action, commends itself to refinery engineers without argument.

NATIONAL SENTRY TUBING affords that valuable aid to economy and safety. Small holes are drilled part way through its walls at proper intervals on the outer surface, these holes being made cone-shaped at the bottom by use of a sharp-pointed drill. Whenever the wall at any point becomes thinned from underneath, to the gage that has been set for safety, a tiny leak will appear. If this escapes immediate notice, it will increase as wear proceeds outward and as larger and larger diameters of the drill hole are reached; however, the increase will be gradual and very slow. Long before serious weakening has occurred, dripping oil will be plainly seen. Actual bursting tests show that this drilling does not impair the strength of the pipe and tubes.

This means of anticipating and preventing trouble was developed experimentally in the field; but drilling upon equipment in actual use was laborious and had other drawbacks. NATIONAL SENTRY TUBING is drilled before it leaves the mill and is ready for use when it reaches the job. A wide range of dimensions and thicknesses is offered. Write for full information.

NATIONAL TUBE COMPANY
Frick Building, Pittsburgh, Pa.

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

PRINCIPAL SUBSIDIARY MANUFACTURING COMPANIES

American Bridge Company
American Sheet and Tin Plate Company
American Steel and Wire Company
Carnegie Steel Company
Columbia Steel Company
Cyclone Fence Company
Federal Shipbuilding and Dry Dock Company
Illinois Steel Company
Minnesota Steel Company
National Tube Company
Oil Well Supply Company
The Lorain Steel Company
Tennessee Coal, Iron & R. R. Company
Universal Atlas Cement Company

Our Present Position and Future Course

President of American Petroleum Institute Comments on Causes and Conditions in Oil Industry

By Amos L. Beaty
President, American Petroleum Institute*

We meet here under grave responsibilities. Government itself is put to the test, and the citizen is thinking not so much of profits and progress as he is of survival. Industrially, commercially and financially the world seems to be suffering from a creeping paralysis, and to date all remedies have failed. After enduring a drastic and almost ruinous deflation, ours is the one major industry that gives some promise of recovery. The question is whether we can and will hold our gains and go forward, or whether we are to beat a retreat.

We have the greatest responsibility because we are in the best position of all major industries. If we go forward from here it will give other industries a start. Think of the effect it would have upon the steel industry, for instance! An advance by steel or any other major industry would in turn start others, and so on. If we fail to go forward, if we turn coward and retrace our steps, if we allow ourselves to slump back into the paths of 1931—a thing that is more than possible if we are not on guard every minute—then may Providence help us!

Our industry is running the race, we are out ahead, and, even if the manufacturer of automobiles, trucks and buses has a lean season, our product is required to keep old machines going. In short, we have consumption. Ours is the one industry that can steady itself, prevent further decline in employment, and make moderate earnings for investors. When we have done these things we will have accomplished at the same time that even greater purpose, the restoration of public confidence and business.

And we should not forget that our products have played an important role in creating the present oversupply of nearly everything world-wide, the prime cause of the depression. Machinery for mass production would not have functioned as it has, except for our products. The use of these products has virtually eliminated time in the movement of workers between home and shop and from place to place. Essential journeys across country, formerly measured by weeks, are now measured by days in the automobile or hours in the airplane, thus affording more time for work and production. Hence again our responsibility, and hence also the duty of doing something about employment and working time, which will be discussed at length later on.

Importance of Allowing for Declines

And we should know a red signal when we see it. When our domestic consumption did not decline last year, and when world consumption declined only a little, we had a real and in one sense actual decline of 10 or 15 per cent, because that would have been the rate of increase but for the depression. We lost our bearings—and incidentally our shirts—because we had built and planned for the normal increase. Now there is unmistakable evidence of a current and more serious decline. My own opinion is that we shall be very fortunate if our domestic consumption and exports of gasoline for the last nine months of 1932 are within hailing distance of the estimates. From what I have heard and seen I would, without any claim of statistical skill, estimate a decline of 15 per cent.

We could, if we only would, make moderate profits on still lower consumption. All we have to do is to keep production in balance with demand and allow for gradual liquidation of inventories. No drastic reduction is feasible or necessary, but we must make adequate allowance for the decline in consumption. Better allow for too much than too little. And the fact will remain, no matter how much production is reduced, that stocks are in excess of economic working stocks, such as the committees would recommend.

Curtailment of Crude the Key

Time and again it has been demonstrated that we cannot have prosperity in the oil business when too much crude is produced. With refineries overbuilt and a surplus of marketing facilities it is impossible to avoid demoralization if an excessive supply of raw material is on the market. The ingenuity of man for chiseling is such as to render the case hopeless. In recent months our position has improved because of restraints upon production. Gradually the underground surplus is being reduced, and gradually, but more slowly, the surplus above ground is declining, and this process will eventually bring us back to a balance.

The price of oil is an inexorable factor. We have seen its result in lessened wildcat operations, cessation of drives for acreage, abandonment of stripper wells. Let us not grow impatient while this force is in play.

Price Increase and the Wildcatter

The wildcatter is very susceptible. Once the price turns upward, however slight the turn, hope springs in his breast and he is ready to start again. This has been verified in recent weeks. One would think that with the price of crude still below the average cost of production, with but small funds and no credit available for new operations, and in face of the certain fact that any new pool brought in would almost certainly be subject to severe proration, prospectors would be slow to start the drill. But somehow they have managed to find a way, and drilling operations are going up, both inside and outside of proven pools. Wildcat operations have increased apparently on the strength of 15 cents a barrel improvement in price. How much further they would increase with further improvement in price, or just where the critical point is at which there would be danger of new major pools being brought in, I am not prepared to say, but I do call your attention to the trend.

On the credit side of the ledger must be mentioned the affirmative fact that it has been possible to improve the industry and its earnings by artificial restraints upon crude oil production. Those who have scouted the idea are now able to see its merit. Producers generally have seen the light and are willing to go a long way to prevent such demoralization as occurred last summer. Never before has there been such excellent co-operation. Never before has it been so nearly unanimous. And a friendly response has been received from the state commissions which exercise the power of proration and control. True, only one state has laws which in any manner undertake to restrict production to market demand, but other states, on one ground or another, have contrived to lend a helping hand. In states where this was impossible producers have mobilized and by sheer force of will have accomplished what seemed impossible.

This is not surprising if we assume that producers are rational beings. The folly of frittering away an interest in a prolific oil pool is so apparent that no one would be expected to make a mistake. Suppose the producer's oil is not run. Suppose purchasers are unwilling to take it at a fair price. The producer can keep the oil. Since ratable takings are required, why should the owners of a pool be in a hurry to reach the market when prices are abnormally low? It is better to retain the oil and look forward to a time of fair prices. True, expenses of operation and accruing debt payments must be met. But in these days of standstill agreements it may not be out of order to tell the bankers that they must wait. It will not be a new sound to their ears.

Laws on Curtailment

The decision of the Supreme Court of the United States upholding the Oklahoma statute is heartening. It was not necessary for the court to write upon the broad proposition of economic waste. Nevertheless economic waste is one of the things inhibited, and it would seem fairly deducible from this decision, especially in view of the same court's ruling in Walls vs. Midland Carbon Co., that the states have power to prevent the economic waste of oil. Statutes of this kind are very helpful at times, and the industry can well afford to sponsor their enactment.

If the Oklahoma statute were being considered by the legislature de novo there would doubtless be a better Section 2. That section deals specifically with one phase of economic waste, namely, the taking of crude oil from the ground at a time when there is not a market therefor at a price equivalent to the actual value. It invests the Corporation Commission with authority to determine such value from time to time, and the standard provided is the retail price of products combined, less cost and a reasonable profit on transporting, refining and marketing. During the period of our recent troubles this formula would not have improved the price of crude. As a matter of fact the price of crude has been higher than the total of products, less cost of transporting, refining and marketing. Producers therefore invoked and the commission applied the general provisions of other sections, which contain broad inhibition against economic waste in general and waste incident to the production of crude in excess of transportation or marketing facilities or reasonable market demand in particular. The Supreme Court of Oklahoma in the Julian case and the three-judge federal court in the Champlin case intimated that Section 2 is unconstitutional. These courts seemed to regard it as a price fixing statute, although it authorizes the fixing of no prices but merely authorizes price ascertainment as a basis for fixing allowable crude production in such manner as will avoid economic waste. Ample authority for all that was done was found in the law outside of Section 2. My regret has been that the principle involved in Section 2 was not defended and the importance of this principle brought to the attention of the court, although it was not vital in the case at bar. Conservation is safe, however, so far as Oklahoma is concerned, with the broad power of the State sustained, even though the formula of Section 2 may remain in doubt legally or be of doubtful value practically.

State Compacts Legislation

The Oil States Advisory Committee, representing the governors of the oil producing states, are advocating an enactment by Congress which will authorize these states, or such of them as may agree, to enter into compacts for the purpose, among other things, of limiting crude oil production and preventing physical and economic waste.

In theory at least the states prevent those direct wastes which attend the production of oil. They prevent its spill upon the ground and the dissipation of reservoir energy. Each state has full power to deal with such subjects and can effectively do so without the aid or concurrence of other states or the adoption of similar policies by them. For two states to covenant, each with the other, that neither will permit these particular types of waste would be like agreeing to the prohibition of arson and larceny. It goes without saying that such things will be outlawed. It is also the function of the state, without compact and without reference to what any other state may do, to deal with the subject of correlative rights as between landowners. It would seem, therefore, that the provisions of the pending bill on these subjects might as well be omitted. The same may be said and more argument made against those

(Continued on Page 45)

*Before A.P.I., Tulsa, June, 1932.

ALL DIVISIONS OF A. P. I. HOLDING MEETINGS IN TULSA

By L. G. E. Bignell

The vanguard of members of the American Petroleum Institute and others interested in petroleum industry activities have begun to arrive in Tulsa for the mid-year meetings of the divisions of production, refining and marketing to be held here June 1 to 3, inclusive. Headquarters have been established in the Mayo Hotel for registration and committee meetings. The technical sessions will be held in the Junior Ball room, Banquet Hall and Crystal Ball room of the Mayo Hotel.

The production division will discuss well spacing, production practices and drilling practice. W. W. Scott, Humble Oil & Refining Co., Houston, Tex.; Charles F. Roeser, Roeser and Pendleton, Inc., Fort Worth, Tex.; and J. R. Gignoux, Shell Oil Co., Los Angeles, Calif., will preside at the sessions to be held Thursday and Friday.

The marketing division also has technical sessions scheduled for those days and W. T. Holliday, Standard Oil Co. of Ohio, Cleveland, Ohio; R. W. McDowell, Mid-Continent Petroleum Corp., Tulsa; and W. S. S. Rodgers, The Texas Company, will preside.

The refinery division will hold meetings Thursday and Friday mornings with afternoon schedules to take care of unfinished business. A. E. Pew, Jr., Sun Oil Co., Philadelphia, Pa.; Walter Miller, Continental Oil Co., Ponca City, Okla.; and F. W. L. Tydeman, Shell Petroleum Corp., St. Louis, Mo., will handle these meetings.

A general session of all divisions is scheduled for 2:00 p.m., Thursday afternoon, with W. R. Boyd, Jr., executive vice president, American Petroleum Institute, New York City, presiding, at which Amos L. Beaty, president, will make his address and will be followed by an address by Charles F. Roeser, vice president. Papers on the refining situation will be presented by John W. Frey and Albert J. McIntosh. The taxation of gasoline will be discussed by Henry F. Long, commissioner of corporations and taxation, commonwealth of Massachusetts.

Committee meetings of the several standardization committees started Monday and will continue through Friday. Many important details will be handled at these meetings and work outlined for further reports to be made at the annual meeting in November.

PENBERTHY PRODUCTS

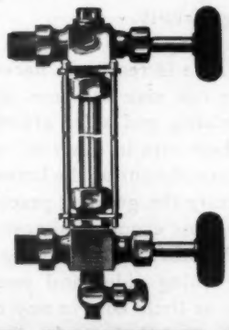
WHERE SERVICE IS SEVERE USE THE PENBERTHY NAVY TYPE GAGE

THE Penberthy Navy Type Gage is of extra heavy construction throughout. Its dependable operation results from its exceptionally rugged design, careful workmanship and the fact that it is made from new metal. These are important reasons why this gage is so generally preferred in the refinery, the natural gasoline plant . . . in fact, wherever conditions are severe.

These characteristics are not peculiar to the Penberthy Navy Type Gage . . . they apply equally to Penberthy injectors, lubricating devices and other types of Penberthy gages. Penberthy Products are carried in stock by supply houses everywhere.

PENBERTHY INJECTOR COMPANY

Established in 1886 DETROIT Canadian Plant Windsor, Ont.



"SURE-DROP"

"SENTRY"

"SATURN"

"SCREW TOP"

"SILEX"

"SAMSON"

The Oil and Gas Journal

PRODUCING REFINING PIPELINE ENGINEERING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle.

President - - - - - - - - - - - - - P. C. Lauinger
General Manager - - - - - - - - - - John M. Egan
Editor - - - - - - - - - - - - - James McIntyre
Managing Editor - - - - - - - - - Andrew M. Rowley
Refinery Editor - - - - - - - - - - C. O. Willson
Technical Editor - - - - - - Charles K. Francis, Ph.D.
Petroleum Engineering Editor - - - - L. G. E. Bignell
Associate Editor - - - - - - - - - - W. T. Anderson
Associate Editor - - - - - - - - - W. T. Ziegenhain
Associate Editor - - - - - - - - Thomas F. Smiley
Advertising Manager - - - - - - - - E. Klappenbach
Circulation Manager - - - - - - - Simon H. Rourke

DISTRICT ADVERTISING OFFICES

C. L. Cain - - - - - 415 Lexington Ave., New York City
C. R. Farmer 6 North Michigan Ave., Room 1416, Chicago, Ill.
Howard Markt - - - 1105 Leader Bldg., Cleveland, Ohio
Neil Williams, 1316 Second National Bank Bldg., Houston, Tex.

TERMS OF SUBSCRIPTION
(By Mail, Postage Prepaid)

Single copies - - - - - - - - - -	$ .15	One year (in United States) - - -	$6.00
Three months - - - - - - - - -	$2.00	One year (in Canada) - - - - -	$7.00
Six months - - - - - - - - - -	$3.00	One year (foreign countries) - - -	$7.00

MEMBER AUDIT BUREAU OF CIRCULATIONS

HOW TO MEET IT

The estimate by the Economics Committee appointed by the Federal Oil Conservation Board that the domestic demand for motor fuel during the next nine months will be approximately five per cent less than for the same period last year is not so bad.

How many other businesses in the country would think themselves back to prosperity if their sales for the balance of the year promised to be even 25 per cent below their former peak?

Why this drop in consumption seems so ominous to the oil industry is because we have been so long accustomed to having a market that could be counted on continually enlarging year after year.

Even when the rate of increase began to decline in 1929 there was still a satisfactory gain in gallonage. It has been only within the past few months that we have had to face the fact of an actual decline in demand and the possibility of a further reduction.

Reports from the various marketing areas have indicated wide differences. In some areas, due to local conditions, there has been a slight increase in consumption. In others the decline in demand has been figured as great as 25 per cent and more.

It is, indeed, almost reassuring to find the Economics Committee estimating only an approximately five per cent drop in domestic demand for the rest of the year. With a reduction in exports estimated at about 14 per cent the net decrease in total demand for motor fuel is put at 6.2 per cent.

Unfortunately the oil industry has been so geared to meet constantly increasing consumption that this sudden reverse has been a shock far greater than the percentage of decline might suggest.

Notably we have been getting far more gasoline from much less basic raw material owing to the marvelous increase in manufacturing efficiency.

Any halt or decline in the demand for motor fuel therefore jars the whole mechanism of the industry.

Efficiency in producing more gasoline that is not needed and from less crude requires a general readjustment in the industry's scope of operations.

The domestic supply of motor fuel required to meet the reduced demand in the coming nine months will be 21,363,000 barrels less than for the like period of a year ago.

The total crude oil supply required will be 65,990,000 barrels less than in the same period last year.

In other words, with a 6.2 per cent decline in total demand for motor fuel there will be a 6.11 per cent reduction in domestic supply needed and a 9.64 per cent drop in the crude oil required for the remainder of 1932.

The Economics Committee estimates that crude oil production should not exceed an average of 2,225,000 barrels daily which would allow withdrawal from stocks of 6,975,000 barrels by the end of the year.

Motor fuel stocks which were 66,950,000 barrels in March should be down to 44,950,000 by October and to 48,000,000 by December 31. This would permit withdrawals of 18,450,000 barrels from too burdensome stocks.

These figures should impress anew upon producers and manufacturers that the policy of curtailment must be continued if greater curtailment is to be avoided.

The report of the Economics Committee offers the industry a reliable gauge of market demand and the supplies of crude and gasoline needed to meet it. Experience has proved the folly of overrunning these estimates and the disastrous consequences of resulting overproduction on prices and company earnings.

Facing for the first time a definite decrease in demand for motor fuel the manufacturer and the producer must adjust their output to the altered circumstances and thereby prevent further demoralization of their markets.

Nothing short of general co-operation will avail. Individual efforts to increase output at the expense of others invariably result in a general breakdown.

But merely protective precautions against overproduction in a time of falling demand is not sufficient. The industry or business that stands still is already going backward.

The Oil and Gas Journal, without apologies, again suggests the advisability and in the present circumstances the necessity of co-operative advertising and sales effort by oil companies during the motoring season to induce greater use of cars by the motoring public.

The Economics Committee reports that motor use has dropped four per cent.

For a time it seemed that the fewer cars in operation were being used more judging by gasoline consumption in some states but this year has now advanced sufficiently to show that the prolongation of the depression is keeping more cars out of service and cutting consumption.

This development comes just at the time when the motor fuel business offers the greatest possibilities to attract consumer interest.

The very fact that the great bulk of the people are still operating their cars indicates conclusively what a strong hold the car has on the average family.

In a great many cases there is a tendency to reduce operation of a car when there is really no necessity for such action but simply because some one else has been obliged to do so. Properly conceived advertising and sales effort could result in those who are able, using their cars in a normal way.

From the standpoint of the barest economy the automobile offers the whole family the greatest practical return, in both pleasure and profit, at the most economical cost.

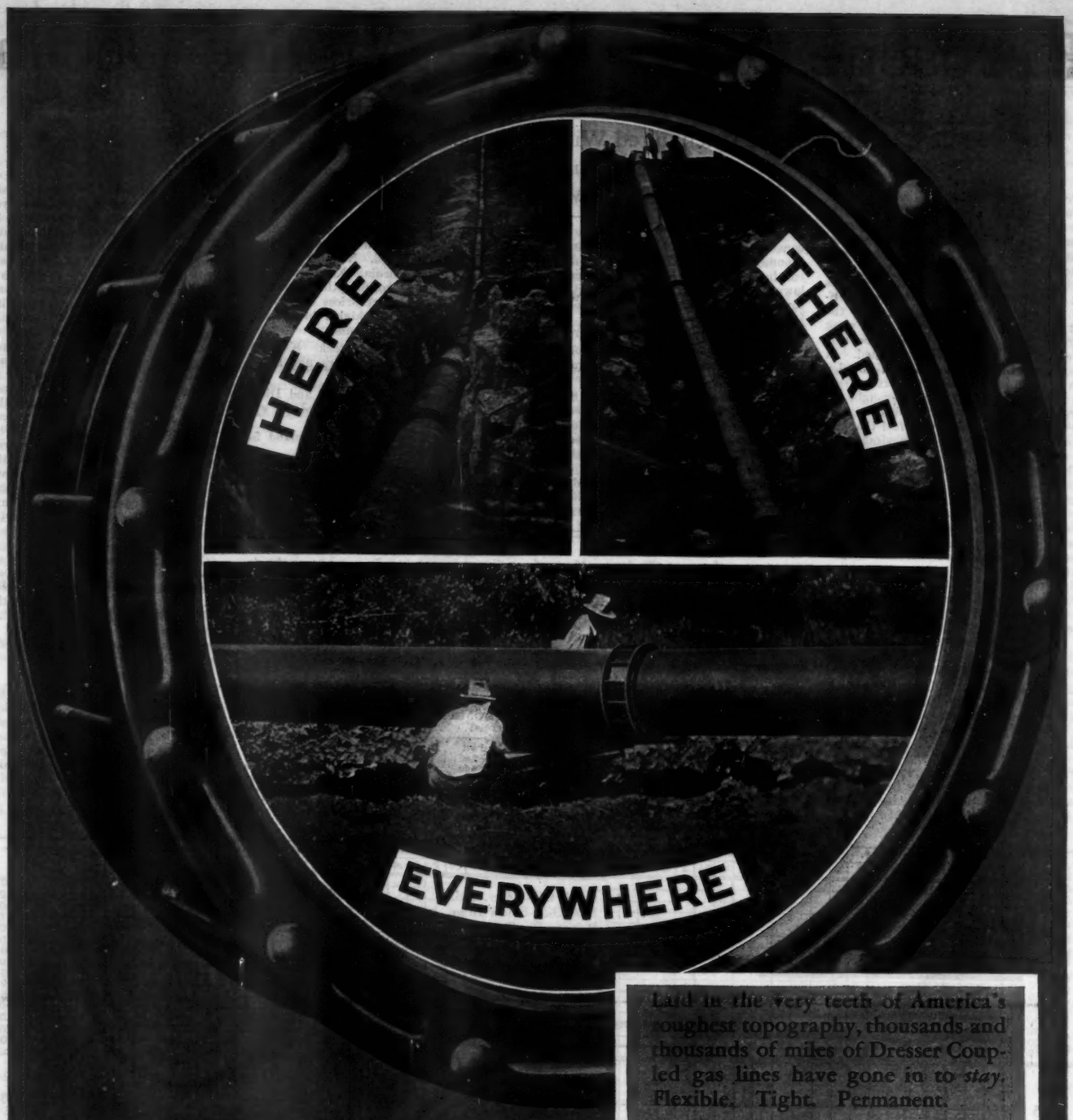
It offers healthful, invigorating recreation at minimum expense in summer evening rides and week-end excursions obtainable at nowhere near as little cost in any other way.

An attractive, well planned and widespread campaign of co-operative advertising by oil companies in each locality, suggesting nearby trips and tours with just the information motorists need, would go far toward turning the tide of consumption this summer.

It seems well worth trying because it promises an increase in gallonage, not simply a switching from one company to another of a falling demand.

It need involve no additional expense. The advertising space now bought by oil companies could be used and concentrated into a campaign that would attract attention and bring results.

What if it should also benefit some seller who does not advertise? Any gain in consumption will be that much gain to the whole business in which all will share.



Laid in the very teeth of America's roughest topography, thousands and thousands of miles of Dresser Coupled gas lines have gone in to *stay*. Flexible. Tight. Permanent.

S. R. DRESSER MANUFACTURING COMPANY
BRADFORD, PA.

In Canada: Dresser Mfg. Co., Ltd., 88 Front St. W., Toronto, Ont.

DRESSER
COUPLINGS *Dominate!*

Kerosene Quotations Continue Decline

All Grades One-Fourth Cent Lower in Oklahoma. Refinery Gasolines Unchanged With Disappointing Demand in May

By C. O. Willson

Prices on kerosene in the Oklahoma (Group 3) market continued to decline over the past week while quotations on other products for the most part were unchanged. The 41-43 water white grade of kerosene was quoted to the trade at a low of 3½ cents, a decline of three-fourths cent per gallon from the recent high. Offers by sellers and actual sales for the first half of June during the past week indicated that the end in the kerosene price slump had not been reached. A seasonal decline in consumption coupled with an increased production from several plants during May has brought an oversupply of kerosene throughout the Mid-Continent and observers feel that additional price reductions are inevitable unless output is curtailed.

The demand for U.G.I. and cracking stock gas oils improved the latter part of last week in the Oklahoma market and the market was stronger. All grades were selling at a low of 1⅝ cents, an advance of one-eighth cent over the previous week. Tractor and furnace oil distillates are slow but prices are holding fairly firm on all the better grades.

Following the holiday period on Monday it was too early on Tuesday to determine the probable trend for the week in the refinery gasoline market. Reports indicated that weather conditions were favorable for the week-end which extended from Saturday through Monday and it was thought that gasoline shipments between refineries and bulk stations would continue heavy over the remainder of the week.

Summer Demand

With the summer gasoline consuming season now under way, many refiners, especially the larger operators, are endeavoring to estimate their probable requirements over the next 90 days. Most of these operators have found that the estimates made earlier in the year require important revisions downward so far as the gasoline demand is concerned. It is no secret among Mid-Continent and Middle West trade that the May demand for gasoline was highly disappointing to most refinery operators. In some cases the demand was from 10 to 20 per cent less than had been expected at the start of the month.

Observers find it difficult to explain some of the large decreases of the individual companies during May. The sales of the first four months of the year showed a decrease in domestic consumption over the same period last year but this trend was far more apparent in May.

Those in touch with the retail trade state that the trend toward a greater drop in gasoline consumption when compared with the same month last year is due to the fact that general business conditions have not improved. Car owners in many states were permitted to operate their cars the first quarter of the year without buying a new license. Now this privilege has been rescinded and the owners are leaving their cars in their garages and not buying the new license. Old cars are not being used due to fact that the owners do not care to spend the money necessary to keep them in repair. The number of old cars taken out of service far outnumber the new car registration. A final factor in the consumption of motor fuels and oils is the reduced demand per car from owners whose cars are still operating. The necessity for curtailment of expenses is said to have materially reduced the requirements per car.

Observers point out that with any improvement in general business conditions this trend will be stopped. However, if conditions fail to improve during the summer months the relative consumption month to month when compared with a year ago will become worse instead of better.

Curtailment Necessary

The obvious conclusion from this situation is that the supply of gasoline must be curtailed in line with the decline in demand. It is possible that many refiners instead of expanding the operations of their plants as they expected to do at the start of the main consuming season will be forced to curtail their crude runs to stills. It is certain that gasoline

REFINED MARKET BAROMETER

Reports from scattered points the first of the week indicated a fair to heavy consumption of gasoline for the three-day week-end extending from Saturday through Monday. Tank car prices on gasoline were generally unchanged. Natural gasolines continued soft in the Mid-Continent but were firm in California. Kerosene prices lower at interior refineries reflecting seasonal decreases in consumption. Demand for tractor fuels and furnace oils slow. Heavy fuels firm. Export prices on gasoline lower. Wax prices lower in East. Some grades of cylinder stocks higher in Pennsylvania and coastal refineries. Improved marine demand for Diesel oils.

Mid-Continent—Refinery gasolines steady. Natural gasolines weak. Kerosene prices lower. Slow demand for tractor fuel and furnace oil with prices unchanged. Gas oil and fuels firm. No change in lubricants and wax.

East Coast—Gasolines firm. Slow trading in kerosene. Heavy fuels and Diesel oils steady. Some grades of cylinder stocks higher. Low melting point petroleum wax slow and prices lower. Seasonal decline in furnace oil demand.

Chicago—Gasoline market unsettled. Special naphtha prices lower. Demand for kerosene slow and prices lower. All grades of fuels slow.

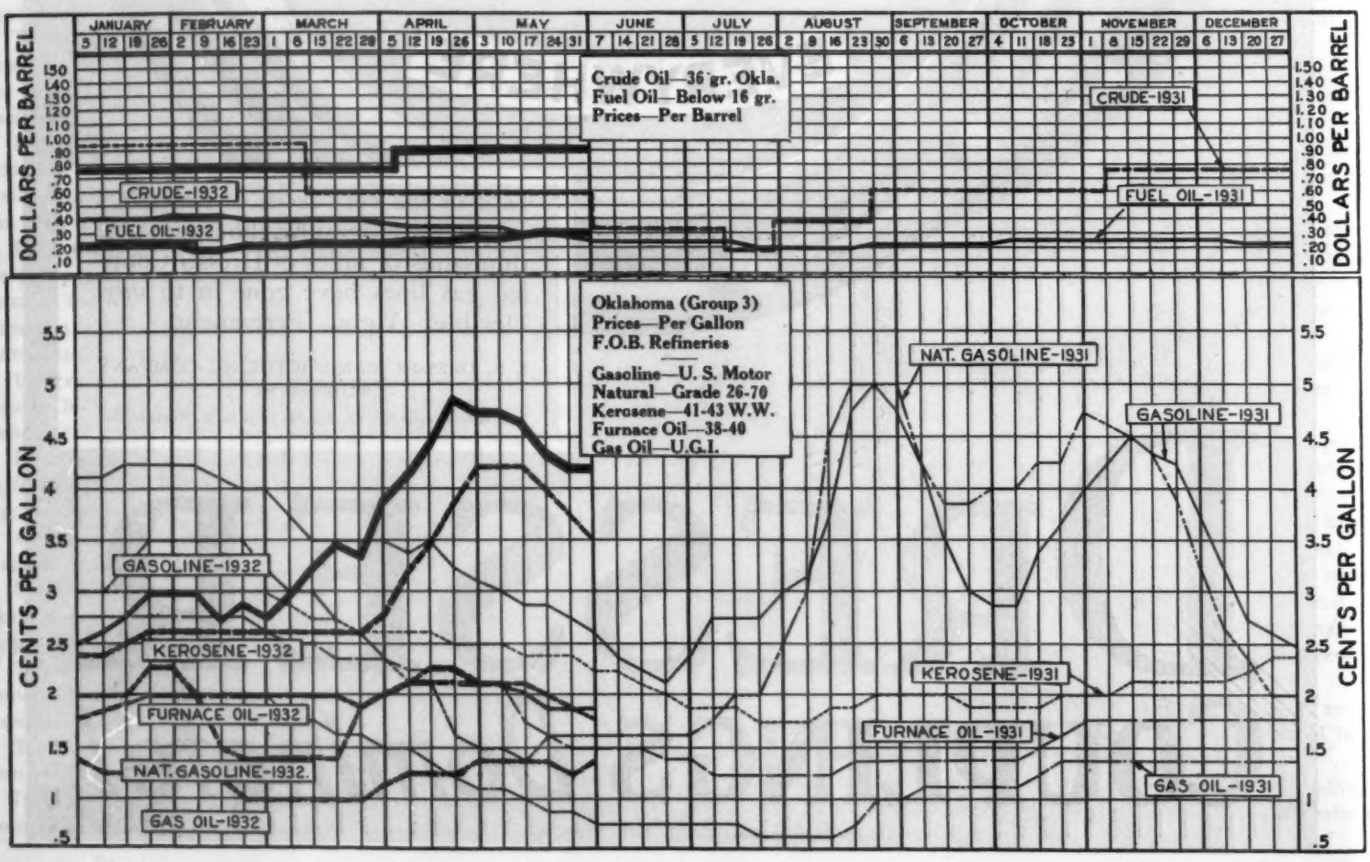
Pennsylvania—No important price changes. Demand for lubricants sufficient to keep prices firm. Kerosene demand falls off. Wax weak.

Gulf Coast—Market quiet. Gasoline prices for export movement lower.

California—Prices on some grades of fuel oil lower. Other products unchanged.

MID-CONTINENT REFINERY OPERATIONS
(Data in barrels)

	May 21, 1932			May 16, 1931		
	Dly. crude to stills	Gasoline stocks	Fuel oil stocks	Dly. crude to stills	Gasoline stocks	Fuel oil stocks
Okla., Kans., Mo.	246,000	3,995,000	3,335,000	274,700	3,676,000	4,064,000
Inland Texas	99,100	1,613,000	3,821,000	144,300	1,159,000	2,712,000
N. La., Ark.	49,500	150,000	828,000	54,300	152,000	908,000
Total	394,600	5,758,000	6,984,000	473,300	4,987,000	7,684,000



markets generally are not in a position to absorb any excess production and constant care will be necessary to prevent a duplication of last summer's development when prices on crude oil and gasoline crashed to record lows during the peak of motor fuel demand.

The accompanying table shows that Oklahoma and other Mid-Continent refiners have materially curtailed their crude oil runs to stills when compared with a year ago. This has been true over the greater part of the past year. Despite this fact, gasoline stocks at Mid-Continent refineries on May 21 were 771,000 bbls. or 13 per cent greater than on the same date last year according to the weekly reports of the American Petroleum Institute. Most of the other refining areas have not reduced their runs as much as the Mid-Continent but in general their stock situation is better than it was a year ago. This again shows that the Mid-Continent market for gasoline is constantly being circumscribed due to competitive conditions and must bear more than its percentage share of any curtailment program.

Gasoline and Naphtha

Trading in refinery gasolines was dull Tuesday. Most refiners were not concerned with this situation stating that it would be Wednesday or Thursday before it would be known whether the three-day week-end holiday period was to result in increased orders from jobbers and their own bulk stations. A price range of 4¼ to 4¾ cents was being maintained on the low octane U. S. Motor grade in Oklahoma with the usual three-eighths cent premium for the 57-65 octane grade and five-eighths cent for better than 65 octane material.

These prices were being shaded by quotations from a few resellers who apparently were protected by their refinery sources of supply. The practice of selling to brokers at one-fourth to three-eighths under the low published price continues on the part of a few refiners and many hold this situation responsible for the difficulty encountered recently in maintaining prices. The resellers with this protection are able to quote from one-eighth to one-fourth cent under the low quotations established by refiners. Some North Texas and Middle West gasoline is being sold on this basis and the resale prices are being quoted over the entire territory except where freight rates between the destinations and sources of supply are prohibitive.

The quotations on the higher gravity and low endpoint gasolines are the same as last week. A spot sale of 390 and 375 in Oklahoma is a rare event and the 350 and 360 endpoint grades also are not active.

Natural Gasolines

Natural gasolines had not improved up to Tuesday but there were reports in the trade to the effect that the position of these products would improve early in June. Refiners and manufacturers have been co-operating over the past month in an endeavor to work out a program which would provide an outlet for naturals at prices which would permit a profit to the manufacturers and at the same time remove them as a bearish threat to the refinery market. It is believed that the program will result in some of the natural gasoline which has been sold at low prices being withdrawn from the spot market.

Some of the largest manufacturers are also refiners. The plan provides that these refiners furnish outlets for their own products instead of selling it on the spot market. It is also stated that the movement of natural gasoline to the Gulf Coast will be increased. Formerly this coastal market for coastwise and export movement absorbed the greater part of the Mid-Continent natural gasoline production.

If this plan is successful, it will aid in maintaining present refinery gasoline quotations. Over the past week the low vapor pressure natural gasolines varying from 15 to 9 pounds have been quoted at prices from one-fourth cent to 1 cent under the low octane U. S. Motor grade. While these superstabilized grades when properly fractionated, are really superior motor fuels both from the standpoint of volatility and antiknock properties, the low prices at which they are quoted have made them attractive to operators of price cut stations and they have proved as disturbing to the retail market as they have to the tank car trade.

It was reported last week that one large Middle West refinery operator had made inquiries from small manufacturers with the view of making contracts for the purchase of their plant output for shipment north in crude oil lines. The mixing of crude oil with regular grades of natural gasoline for pipe line movement is practicable and at least two Mid-Continent operators are using this method of handling part of their output. The pipe line movement results in a large saving in freight costs and at present prices this saving is the controlling factor in the delivered cost of the natural gasolines.

The 26-70 grade of natural gasoline was quoted at a low of 1¾ cents the first of the week with some sales at 1⅞ cents. The low on the 18-55 grade was 2¼ cents. Prices on the lower vapor pressure and high recovery grades sold as motor fuels ranged up to 5 cents with several sales of under 11-pound material reported at 3¾ and 4 cents.

Gas Oils Active

A week ago there was a weak tone to the gas oil market. Better buying, however, changed this situation later in the week, and the market was firm the first of this week. Good cracking stock and U.G.I. material was bringing a low of 1⅜ cents. Grades of low flash and low cold test which can be used as furnace oil sold up to 1⅞ cents.

No price changes were reported in other products in Oklahoma. Bright stock and steam refined stock supplies have been curtailed and prices are being maintained. Neutral oils and petroleum wax are unchanged.

Tractor distillates and furnace oils are not active.

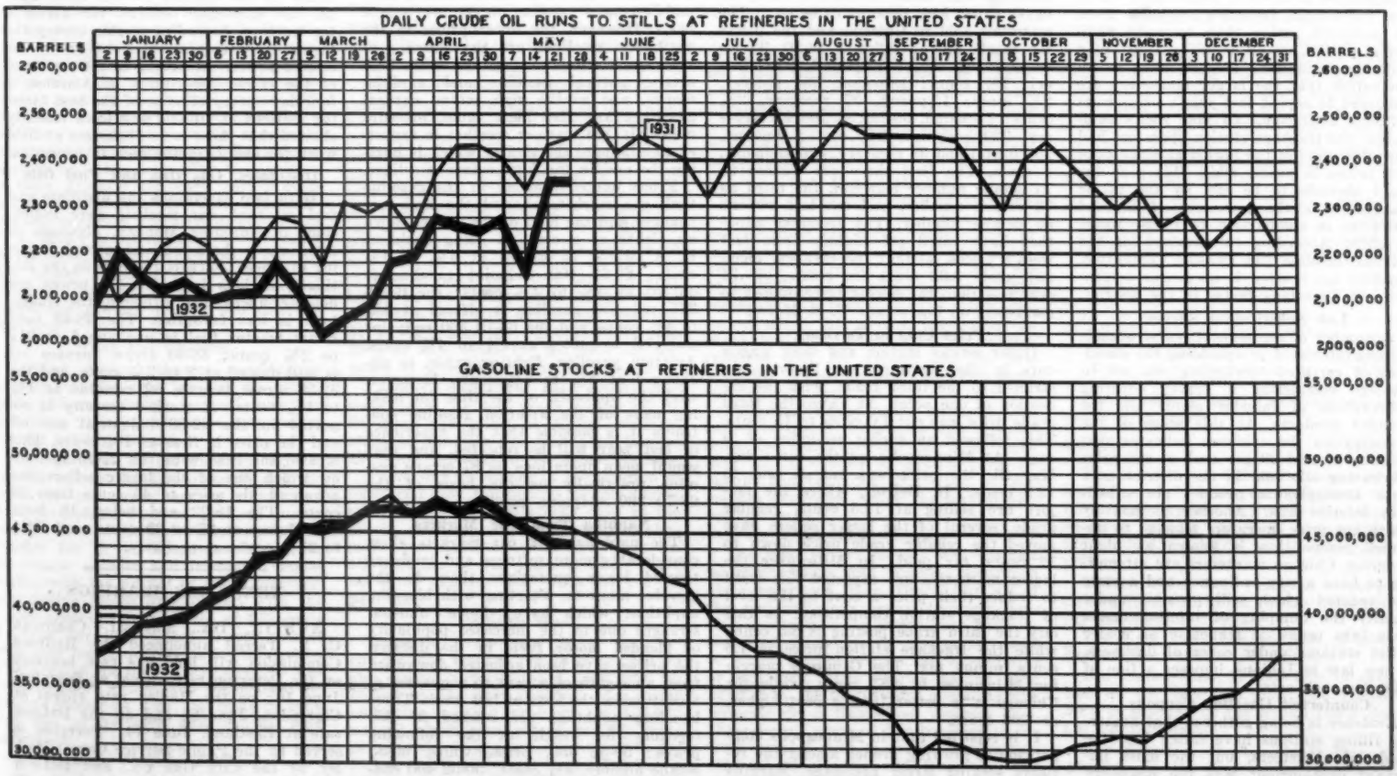
AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to still, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending May 21:

Figures for week ending May 28 not available account holiday.

	Week ending May 21				Week ending May 23			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	453,100	6,387,000	6,211,000	100.0	485,000	8,414,000	8,580,000
Appalachian	91.8	108,000	1,760,000	1,005,000	93.8	91,400	1,653,000	1,036,000
Indiana, Illinois, Kentucky	98.9	306,700	6,545,000	4,122,000	97.5	336,700	6,432,000	3,671,000
Oklahoma, Kansas, Missouri	89.6	246,000	3,995,000	3,335,000	89.4	278,300	3,664,000	4,225,000
Texas	91.3	580,900	8,064,000	8,959,000	91.9	560,200	8,154,000	9,583,000
Louisiana and Arkansas	98.9	164,100	1,853,000	4,726,000	98.3	160,100	2,336,000	2,389,000
Rocky Mountain	89.4	42,900	2,046,000	643,000	93.1	60,300	1,894,000	853,000
California	96.4	462,700	14,053,000	96,545,000	98.8	469,700	12,902,000	98,218,000
Total United States	95.1	2,364,400	44,703,000	125,546,000	95.7	2,441,700	45,449,000	128,555,000
Texas Gulf Coast	99.8	480,900	6,451,000	6,138,000	100.0	419,400	7,011,000	6,795,000
Louisiana Gulf Coast	100.0	114,600	1,703,000	3,894,000	100.0	104,900	2,198,000	1,467,000

(1) Per cent refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) gas and fuel oil stocks.



All data based on weekly reports of the American Petroleum Institute. Figures for last week not shown in graph but are included in above table.

Minor Price Changes in Chicago Area

Refinery Gasolines Unchanged With Lower Quotations on Special Naphthas and Kerosenes. All Fuels Dull

By Robert C. Conine

Chicago Bureau, The Oil and Gas Journal, 6 North Michigan Ave.

CHICAGO, May 31.—The gasoline tank car markets in Chicago district are holding by a narrower margin to the low of last week, while special naphthas, kerosenes and the increasingly popular natural gasolines were easier, many of the products showing declines of a quarter of a cent. The general weakness of natural gasolines and the availability of suitable blending naphthas have practically removed U. S. Motor gasoline from the schedule of cut price service stations in Chicago, Milwaukee and elsewhere in the district.

On Saturday Standard Oil Co. (Indiana) reduced the price of the third grade gasoline 1 cent to 12.5 cents, including the 3-cent state excise tax, and this cut was promptly followed by other leading marketers. The trackage station operators in most cases set up new prices half a cent under the majors' third grade price. The cut covered the entire metropolitan Chicago district. The trackage station operators have been selling 1 cent below the postings of the regulars. According to a representative of the latter the major companies have been forced to lower the third grade price to meet competition of blended gasoline.

Further Cuts to Follow

The president of one of the major refining and marketing companies in the territory stated that the original purpose of the third grade gasoline, that is, to protect the major sellers from the price cutting tactics of blenders, tax evaders and racketeers, as well as from competitive methods of larger units which use exceptional facilities to enable them to undersell rather than to make additional profits, would be brought into play with determination. This is taken as an indication that the larger marketers are prepared to repeat last year's price wars without hesitation. In last year's campaigns the trackage station operators had the advantage of the lowest gasoline tank car prices in years, while this year the chief obstacle to be met by the major companies is the low cost of blended gasolines in comparison to U. S. Motor gasoline. According to members of the Illinois Gasoline Tax Evasion Committee, gasoline tax evasion is no longer a menace and disturbing factor in the district.

Lub Substitution Survey

A number of representatives of organizations interested in upholding the standards of certified lubricating oils are in Chicago completing a survey covering substitution of inferior motor oils for branded products. At this stage of the investigation the evidence indicates that between 15 and 20 per cent of cut price lubricating oils sold in the district as a Pure Pennsylvania product are substitute inferior oils. Another method by which cut price operators manage to undersell competition is known as night dumping. Chicago marketers are attempting to have a city ordinance and a state law enacted which will prohibit under penalty the dumping of inferior motor fuels into tanks of franchise or dealer outlet stations under cover of darkness. A new law in Indiana imposes a fine of $500 for such acts.

Counterfeit Gasoline Coupons

Evidence is being gathered that numerous filling stations have fallen into the hands of racketeers, but the most important development was the discovery by White Star Refining Co. officials that thousands of counterfeit gasoline coupons were being circulated in Michigan, especially in the Detroit district. The company offers a reward of $1,000 for information leading to the arrest and conviction of members of the "coupon ring," and has ordered all Michigan dealers to refuse to accept coupons. Holders of coupons are to return them and accept cash if the coupons are genuine. Other major companies using coupons in the Indiana territory are expected to make investigations.

Marketers Abetting Price Cutters

If the trackage station operators take the aggressive in the looming price war, at least one refiner who operates a number of regular price service stations in Chicago will be responsible if the outcome is a break in the price of the regular and premium grades as well as the white third grade. Representatives of this refiner have approached trackage stations with a proposition by which the cut price operator will buy his motor fuel off the tank wagon at 10 cents, tax paid, so that he can sell it to the customers at 12.5 cents, for a profit of 2.5 cents. With further weakness shown Monday in the natural gasoline and blending naphtha tank car markets, several marketers in Chicago district point out a clear way for the trackage station operators to undersell major competition and still make a profit. At the trackage stations where U. S. Motor gasoline has been sold during the past few months, the business has been gradually losing money as consumption showed little sign of approaching the expected gallonage. These trackage stations, according to several of the operators, are now showing a profit by the use of blended gasoline. There appears to be much more interest in natural gasoline and nahptha prices than in the gasoline tank car markets. What effect warmer weather will have on the fuels which are likely to cause vapor lock remains to be seen. The materials sold in Chicago and the prices for resale are as follows: 26-70, 90 recovery, 1⅝ cents; 22-pound, 95 recovery, 1¾ cents; 18-pound, 95 recovery, 2⅛ cents; 15-pound, 90 initial and 97 recovery, 320 endpoint, 3¾ cents; 9-pound, 100 initial and 98 recovery, 320 endpoint, 4 cents. The first three are classed as 75 octane number material, the third as 73 octane number, and the last two as 65 octane number. The lbending naphthas have eased off slightly from last week's prices, so that the cheapest blend now costs 3.22 cents for resale, or .78 cent less than the lowest price quoted to marketers on low octane U. S. Motor.

Price Cuts in Territory

Other service station and tank wagon cuts in the territory are likewise restricted to the third grade, with the exception of one point. At Fargo the third grade price was cut 1.6 cents to 15 cents. This followed an earlier reduction of .9 cent. At Minneapolis on the same day, May 21, the price was cut .5 cent to 12.5 cents. In Detroit, where the majors are selling at 12.5 cents, regular grade, several of the larger sellers have moved the regular grade price down to 12 cents, tax paid. In Milwaukee the larger marketers are expected this week to reduce their price a cent to the level of trackage station competitors. In this city the third grade posting is 8.5 cents, while the trackage station price is 7.5 cents, minus tax. The Group 3 margin for Milwaukee is 4.83 cents, while for Chicago it is better than a cent higher, or 6.06 cents.

It is reported that in Minneapolis competition is growing keener among the refiners seeking larger gallonage. Margins which have been thought peculiar to Chicago district are now heard in Minneapolis and St. Paul. This is the alternative of three-eighths of a cent below the low of daily published quotations.

Cooler weather at the approach of the holidays served to lower the expectations of jobbers last week and business was at its dullest. Service station operators appeared steeped in gloom and recounted how a woman had left her wedding ring, and men their fountain pens, bull dogs, spare tires, as security for gasoline because they had "left their purse at home." They say paydays have grown wider apart.

Refinery Operations in District

Crude runs to stills in May are slightly lower than in April. In the week closing May 14, the runs had been boosted 119,000 bbls., and on May 21, the runs showed a decrease of 7,000 bbls., while cracked gasoline production increased 5,000 bbls. Gasoline stocks in storage in the district advanced 95,000 bbls. in the week ending May 21, following an advance of 49,000 bbls. in the preceding week. The persistent reports that refiners are buying gasoline in the Mid-Continent are having little effect in Chicago district. Latest estimates on the probable decline in gasoline demand for the territory are placed by competent authorities as high as 18 per cent.

Gasoline Tank Car Markets

In the face of all the disturbing factors outlined above, marketers in Chicago district are far from feeling that the gasoline tank car markets are on the toboggan. After the Memorial Day activities jobbers will be in a better position to gauge their requirements as most of them have taken material against a possibly larger demand than appeared over the holidays. Last week's quotations have narrowed slightly as marketers are apparently finding it easy to obtain material for resale as low as 4 cents. Contracts are reported in which refiners offer middle octane gasoline on the low octane basis. However, the lower prices in the antiknock gasolines are the outcome of trackage station competition with high octane natural gasoline and naphtha blends, and as the high octane natural gasolines are also high vapor pressure materials, the warmer weather is expected to eliminate the rivalry which is hurting the middle and high octane gasolines.

Prices quoted Monday in the gasoline tank car markets showed the lows unchanged and the high of the ranges down an eighth of a cent on going business. U. S. Motor is offered at 4½ to 4⅝ cents; 60-62 400 endpoint gasoline is quoted at 4⅜ to 4½ cents; the 64-66 375 endpoint gasoline is offered at 4⅝ to 4¾ cents, and the 68-70 360 endpoint material is quoted at 4¾ to 4⅞ cents. Aviation gasoline, fighting grade, is unchanged at 5⅞ to 7½ cents. However, with the approach of the time for making most of the aviation gasoline contracts it is possible that the experience of last year will be repeated, and that would mean quotations on 87 octane gasoline practically on the basis of the 68-70 360 endpoint gasoline.

Naphtha Tank Car Markets

The naphtha tank car markets show considerably more softness and tendency toward lower quotations than do the gasoline markets. Starting with blending naphthas, which have shown unusual strength due to the increased popularity of blended motor fuels in the district, the prices have been adjusted downward from an eighth of a cent to a quarter of a cent below the lows of last week. Three blending naphthas are offered in this territory for resale at the following prices: 50-52 450, prime white, 50-55 octane number, 4¼ cents; 50-52 400 endpoint, water white, 60-62 octane number, 4⅜ cents; 54-56 437 endpoint water white naphtha, 50 octane number, 4¼ cents. The price to the trade is an eighth to a quarter of a cent higher.

Markets Down Quarter Monday

Marketers reported they did not expect the naphtha tank car markets to show further weakness, but said they were willing to take business at a quarter of a cent below last week's quotations for prompt shipment. Quotations Monday on specifications materials were as follows: Light cleaners' naphtha, 6 to 6¼ cents; lacquer diluent, 180 initial, 250 endpoint, 7¾ to 8¼ cents; lacquer diluent, 140 initial and 200 endpoint, 8¼ to 8½ cents; rubber solvent, 68-70 gravity, 100-300, 5¾ to 6¼ cents; Stoddard solvent, over 100° flash, 300-410°, 5¼ to 5½ cents; petroleum thinner, 300-415°, over 83° flash, 4¾ to 5 cents; V.M.&P. naphtha, 200-330°, 5¼ to 6 cents; petroleum spirits, slowest dry, 3⅞ to 5 cents.

The reported shortages in certain of the naphthas, according to sellers, is not so much a statistical matter as one of availability at prices in line with competition in the Chicago, Minneapolis and various Ohio districts. That demand for naphthas wll show a much greater decline, comparatively, than that for motor fuels, is indicated in the report of one refiner that he has curtailed his naphtha production to the lowest level in recent years and still has a surplus of materials which he intends to hold for a better price.

Kerosene Tank Car Markets

The kerosene tank car markets are showing further weakness with the price of the 41-43 water white material moving down an eighth of a cent to a range of 3⅝ to 3¾ cents, and that of the 42-44 water white kerosene down an eighth of a cent to a range of 3¾ to 4 cents. A recent survey of conditions on farms in the district throws some light on the slackened demand for kerosene for tractors. According to this survey the farmers are turning back to horses for motive power. According to the secretary of the Horse Association of America, a four-day survey of some of the best farming sections of Illinois and Iowa recently showed that there were 18 horses at field work for every tractor seen in operation.

Distillates, Gas Oils and Fuel Oils

With two exceptions the distillate and fuel oil tank car markets gave indications of softening Monday, although in some cases there was no actual lowering in prices. Such is the case in the distillate markets in which the prices are holding unchanged although the undertone is less favorable. The 38-40 light straw tractor fuel is unchanged at 2⅛ to 2⅜ cents; 38-40 straw furnace oil is still quoted at 2 to 2⅛ cents, and the 32-36 straw furnace oil remains at 1¾ to 1⅞ cents. A marked scarcity is reported in the 32-36 industrial gas oil and the price is firm at 1⅜ cents. This is also the case with the 22-26 fuel oil on which one of the larger sellers has advanced his price to 45 cents from 40 cents. The 18-22 and below 18 fuels were low at 25 to 30 cents, and 22½ to 27½ cents, respectively.

TEXAS GAS HEARINGS

AUSTIN, Tex., May 31.—Chairman C. V. Terrell announced the Railroad Commission will hold gas rate hearings on the Perryton rate appeal at Perryton, June 10; on the Hadley rate appeal at Clarendon, June 8; and on the DeLeon rate at Eastland, June 14. Perryton is served by the Public Service Corp.; Hadley by the City Gas Co., and DeLeon by the Southwest Gas Co.

Holiday Stimulates E. Coast Gas Sales

Tank Car Markets Strengthening. Early Upward Adjustment of Retail Prices in New York Expected. Operations Remain Limited

By A. E. Mockler

New York Bureau, The Oil and Gas Journal, Suite 2803, No. 19 Rector Street

NEW YORK, May 30.—Featuring the East Coast refined products market during the past week was a sharp increase in gasoline gallonage, bringing renewed strength to the refinery market and tending to correct to a considerable extent recent unfavorable developments in retail markets which had reacted against the position of the service station price basis in metropolitan territory. The holiday, which was converted into a triple week-end holiday in many lines, substantially "stepped up" activities in both tank car and tank wagon gasoline markets, and volume handled for the week-end was the largest thus far in 1932 for a comparable period.

Aside from a further strengthening in the cylinder oil market, and a few minor price readjustments in paraffin wax, there were no price developments of importance during the week.

East Coast refineries continue to hold down operations to a limited volume, plants in this area currently operating at approximately 71 per cent of capacity. Refiners are adhering to their plan of drawing against storage holdings to take care of part of their demand, while shipments of motor fuel from South America, California and the Gulf round out their supplies.

The California gasoline position appears to be causing considerable concern to many interests in the East, and much is still heard in some quarters of the market regarding an impending "flood" of motor fuel from the Pacific Coast. Aside from a few cargoes already sold for summer delivery to the East, there has been no important business reported in the cargo market to justify the reports of probable heavy shipments, and it is not considered likely in well-informed circles that the major California companies, most of which have eastern affiliations, would deliberately resort to gasoline dumping which would inevitably react against the stability of East Coast markets and thus jeopardize the position of their Atlantic Seaboard parent companies or affiliates. The California market has weakened recently, however, and U. S. Motor is offered as low as 5 cents in the open market, which, with current low tanker rates, would lay down the California product at East Coast ports under the present posted quotation in this area.

Tank Car Gasoline

Jobbing demand showed considerable activity, particularly late in the week, with jobbers ordering forward tank car shipments in large volume in preparation for the holiday demand.

The position of the refinery market showed substantial improvement and the trend toward price shading which had been perceptible in some quarters during the previous week had disappeared. The market for U. S. Motor gasoline under 65 octane number had broadened materially, with the advent of warm weather, and selling prices were firmer, with the inside quotation now posted at 6¾ cents in tank car lots, which is one-quarter cent over recent quotations for this grade. The demand for high octane gasoline was likewise more active, and the market remained steady at 7 to 7¼ cents in tank car lots at refinery and marine bulk terminals.

Tank Wagon Gasoline

Standard of New York's action in cutting service station prices by 4 cents and tank wagon quotations by 2 cents late in the previous week has apparently served notice on the marketing trade in the metropolitan area of Socony's willingness to "meet competition" wherever it develops, and it is expected this action will have a salutary effect upon the general retail situation.

All of the major companies have followed Socony's cut, and service station operators who hitherto have kept the retail market in a constant turmoil through their price cutting operations now find their activities curtailed through the narrower margin which they are now given, 3 cents against 5 cents formerly.

With the East experiencing record warm weather and posted prices for leading brands of gasoline at extremely low levels, it might be expected that "third grades" would be pushed to the fore for competitive marketing purposes, but in the greater part of the territory third grades are still a rarity, and it is considered possible the industry may go through the summer season without this additional drawback.

Gallonage was exceptionally heavy during the week, and tank wagon delivery departments were kept busy over the week-end making deliveries to stations whose supplies had been depleted by holiday buying.

Kerosene

Limited trading was again in evidence in the refinery kerosene market last week, although a steadier undertone was in evidence. Refiners were posting 41-43 water white at a range of 5½ to 6 cents in tank car lots, f.o.b. terminals, but jobbing demand was rather inactive.

Tank wagon kerosene demand has not yet picked up to any material extent, and prices remain unchanged throughout the territory. Marketers are looking for an early improvement in gallonage, as the vacation season is just getting under way, and a good volume of business is normally handled in resort sections.

Lubs

Spot quotations for cylinder oils have again been marked upward, in line with higher prices quoted at the refineries, and there has been a steady volume of business passing during the week. The market for 600 steam refined is one-half cent higher at 21½ to 22 cents, with 650 steam refined showing a corresponding increase at 24½ to 25 cents. On 600 Pennsylvania flash, the market is now held at 25 to 26 cents, an advance of 1 cent, with 630 flash one-half cent higher at 30½ to 31 cents. Bright stocks were also advanced during the week, to 31 to 32 cents for light 140-150, and 29½ to 30½ cents for the dark oil, advance of one-half cent in each instance.

Leading marketers are maintaining their price for top grade motor oil at 30 cents per quart at filling stations, although lub oils are posted as low as 15 cents per gallon at some stations.

There was no change in the position of industrial lubs. Consuming manufacturers are ordering forward stocks only as the oil is actually required, and this has made for hand-to-mouth operations in all branches of the market. There were no price changes last week on red or pale oils.

Paraffin Wax

Domestic consumers have not reentered the market for fully refined to any extent, and continued quiet was reported on the spot position. An easier undertone was in evidence on 120-122 a.m.p., which was quoted at 2½ cents per pound, off a quarter cent, while the higher melting points were showing a little more firmness, 125-127 a.m.p. being firm at 3 cents per pound and 130-132 a.m.p. quoted a quarter cent higher at 3⅜ cents per pound.

Export demand for wax, both crude scale and fully refined, has fallen off, and there were few inquiries in the market.

Furnace Oil

The market for domestic heating oils has entered its "hibernation" period, and there was very little movement reported in either the refinery or retail markets. Marketers are contracting ahead for 1932-33, and indications point to further gains in consumption, which has established new high records periodically during the past several years.

Fuel Oil

Bunker "C" oil markets were fairly active, and refiners continued to quote at 75 cents, in bulk, f.o.b. terminals. This quotation represents a 25 per cent increase over the posted price in effect at the start of the year, and the market has been exceedingly firm since the advance earlier in the month.

Volume of fuel oil business has been well maintained, refiners report, and contract deliveries are coming up to expectations. In the Philadelphia market some sellers still quote 80 cents, but at other principal Atlantic Coast ports a flat 75-cent quotation applies.

Diesel Oil

Marine consumption has shown a little improvement during the past few weeks, and the market is firmly established at the recently advanced level of $1.50 per barrel, in bulk, at harbor terminals. The advance apparently has not affected demand adversely, and American refiners have watched with a good deal of interest the recent advancing trend of refined products prices at the Rumanian export terminal at Constanza, which has furnished sharp competition in Diesel and bunker "C" sales in European ports during the past year or so.

Gas Oil

Trading in the gas oil market continued along limited lines, and the market was unchanged, with 28 gravity plus recycled oil posted at 4 cents in tank car lots at terminals, and some spot material still to be had at a quarter cent under that figure.

Gulf Export Market

Sellers at the Gulf reduced their export quotations and while a nominal undertone ruled, the market was quoted at the close at 4½ cents for U. S. Motor, 5⅝ cents for 60-62 400, 4¾ cents for 61-63 390, and 5 cents for 64-66 375 endpoint, with indications the latter quotation might be shaded fractionally on cargo business. There were no cargoes reported sold for export, and no new inquiries. Kerosene was quiet and without price change.

Following recent price advances, the export market at Constanza was reported quiet and unchanged for the week ended May 12. A number of upward price revisions had been put into effect by Rumanian exporters during the several preceding weeks.

Petroleum Exports

The local export market was without material change and business continued along restricted lines. Practically all of the real gallonage export business handled locally thus far in the year has consisted of shipments by the major units to their foreign marketing subsidiaries or affiliates, little volume having been handled by the independent operators who formerly did a flourishing business here. Diversion of much of this business to the Gulf, coupled with the sharp competition afforded by Russia and Rumania, and the increasing tendency of foreign consuming countries to equip themselves with home refining facilities, has all reacted against the local export fraternity.

The following table shows exports of principal refined petroleum products from the port of New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	May 21	May 14	May 7
Gasoline	55,000	77,000	21,000
Naphtha	70,000	610,000	172,000
Kerosene	100,000	106,000	16,000
Fuel and gas oil	258,000	14,000	5,000
Lubricating oil	615,000	745,000	245,000
Petroleum, ref'd	320,000	305,000	245,000
	Pounds		
Petrolatum		35,000	
Paraffin wax	565,000	2,210,000	690,000
Refined	180,000	60,000	56,000
Scale	10,000	150,000	
Lubricat'g grease	365,000	645,000	635,000

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended May 21 totaled 1,712,000 bbls., a daily average of 244,571 bbls., compared with 2,050,000 bbls., a daily average of 292,857 bbls. during the previous week, and a daily average of 264,536 bbls. for the four weeks ended May 21. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast Ports—	
Baltimore	227,000
New York	885,000
Philadelphia	374,000
Others	226,000
Total	1,712,000
Daily average	244,571
At Gulf Coast Ports—	
All ports	None
At Atlantic and Gulf Coast Ports—	
Total	1,712,000
Daily average	244,571
Daily average four weeks	264,536

Distribution of total imports is as follows:

Crude	1,262,000
Gasoline	311,000
Fuel oil	139,000

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended May 21 totaled 232,000 bbls., a daily average of 33,143 bbls., compared with 117,000 bbls., a daily average of 16,714 bbls., during the preceding week, and a daily average of 16,786 bbls. for the four weeks ended May 21. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast Ports—	
Baltimore	37,000
New York	80,000
Philadelphia	115,000
Total	232,000
Daily average	33,143
At Gulf Coast Ports—	
All ports	None
At Atlantic and Gulf Coast Ports—	
Total	232,000
Daily average	33,143
Daily average four weeks	16,786

Distribution of total California oil receipts is as follows:

Gasoline	232,000

The shipment landed at Baltimore during the week is believed to represent the initial delivery on a five or six cargo contract recently placed by a prominent independent marketer with a California refiner.

There were four cargoes reported cleared from California for the East during the week, as follows:

For New York, 129,000 bbls. of gasoline on the Tamihua (Richfield).

For Philadelphia, 117,000 bbls. of gasoline on the Southern Sun and 115,000 bbls. of gasoline on the Sunoil (both Sun Oil Co. tankers).

For Tiverton, R. I., 73,900 bbls. of gasoline on the Utacarbon (Union Oil Co. of California).

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINES

	May 31		May 24	
OKLAHOMA (Group 3)—				
*U. S. Motor	.04¼	.04¾	.04¼	.04¾
60-62 400	.04⅜	.04¾	.04⅜	.04¾
64-66 390	.04½	.05	.04⅝	.05
64-66 375	.04⅝	.05	.04⅝	.05
68-70 350	.04¾	.05¼	.04¾	.05¼
NORTH TEXAS—				
*U. S. Motor	.04½	.04½	.04½	.04½
60-62 400	.04¼	.04⅜	.04¼	.04⅜
64-66 390	.04⅜	.04¼	.04⅜	.04¼
64-66 375	.04½	.05	.04⅝	.05
64-66 360	.04⅝	.05¼	.04⅝	.05¼
†NORTH LOUISIANA—				
*U. S. Motor	.04⅞		.04⅞	
60-62 400	.05		.05	
†ARKANSAS—				
*U. S. Motor	.04⅞		.04⅞	
CHICAGO Based on Okla. (Group 3)—				
*U. S. Motor	.04¼	.04⅜	.04¼	.04½
60-62 400	.04⅜	.04⅝	.04⅜	.04⅝
64-66 375	.04⅝	.04⅞	.04⅝	.04⅞
Aviation fighting grade	.05⅞	.07½	.05⅞	.07½
68-70 360	.04¾	.04⅞	.04¾	.05

Octane Ratings—Above quotations cover price ranges on gasoline in which no octane rating is given. Week of May 31, in the case of the U. S. Motor and 60-62 400 endpoint grades where an octane rating of 57-65, inclusive, is guaranteed, prices are three-eighths cent per gallon higher than quotations shown in above tables; where an octane rating of better than 65 is guaranteed, the prices are five-eighths cent higher. In the case of the remaining grades, gasolines of 65 octane rating or higher are quoted one-half cent higher than the quotations shown in above tables.

Unless otherwise provided by agreement of buyers and sellers, the Series 30 testing equipment of the Ethyl Gasoline Corp. is recognized as standard in determining octane ratings.

*Present distillation specifications on U. S. Motor gasoline are: 10 per cent evaporated, 167° F. maximum; 50 per cent, 284° F. maximum; 90 per cent, 392° F. maximum; residue not exceeding 2 per cent; maximum vapor pressure, 12 pounds. Additional specification on U. S. Motor gasoline available from bulletins of Bureau of Mines, Washington, D. C.

†For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
U. S. Motor	.06½	.06¾	.06½	.06¾
60-62 400	.06¾	.06¾	.06¾	.06¾
64-66 375	.06¾	.06⅞	.06¾	.06⅞
68-70 350	.06⅞	.07	.06⅞	.07

Octane Ratings—In the case of U. S. Motor and 60-62 400 endpoint grades, same price differentials based on octane ratings as shown in above tables for Oklahoma and other Mid-Continent areas.

CALIFORNIA (domestic movement only)—				
54-58 U. S. Motor	.04¾	.05½	.04¾	.05½
58-60 400	.06	.06½	.06	.06½
EAST COAST—				
U. S. Motor, below 65 octane:				
New York (Bayonne)	.06¾		.06½	.06¾
Boston	.06¾	.07	.07	.07¼
Baltimore, Md.	.06¾	.07	.06¾	.07
Charleston, S. C.	.06¾		.06¾	
U. S. Motor, 65 octane and above:				
New York (Bayonne)	.07	.07¼	.07	.07¼
Boston	.07¼		.07¼	
Baltimore, Md.	.07	.07¼	.07	.07¼
Charleston, S. C.	.07	.07¼	.07	.07¼
GULF COAST (domestic)—				
U. S. Motor, 65 octane and above	.05½	.05¾	.05½	.05¾
U. S. Motor, below 65 octane number	.05¼	.05½	.05¼	.05½

NAPHTHAS

OKLAHOMA (Group 3)—	May 31		May 24	
50-52 450 (blending)	.04¼	.04½	.04¼	.04½
PENNSYLVANIA (inland refineries)—				
50-54 430-450 (blending)	.05⅞	.06¼	.06	.06¼
ARKANSAS—				
48-50 450 (blending)	.04¾	.05	.04¾	.05
CHICAGO Based on Okla. (Group 3)—				
50-52 450 (blending)	.04⅜	.04⅝	.04½	.04¾
Cleaners' naphtha, 56-58 gr. 200 i.b.p.-320 e.p.	.06	.06¼	.06¼	.06½
Lacquer diluent, 180 i.b.p.-250 e.p.	.07¾	.08¼	.08	.08½
Lacquer diluent, 140 i.b.p.-200 e.p.	.08¼	.08½	.08½	.08¾
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.05¾	.06¼	.06	.06½
Stoddard solvent, 300 i.b.p.-410 e.p. over 100° flash	.05¼	.05½	.05½	.05¾
Pet. thinner, 290, 300 i.b.p.-415 e.p., over 83° flash	.04¾	.05	.04¾	.05
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.05¼	.06	.05¼	.06
Petroleum spirits	.03⅞	.05	.03⅞	.05

NATURAL GASOLINES

OKLAHOMA (Group 3)—	May 31		May 24	
Grade 18-55	.02¼	.02⅜	.02⅜	.02½
Grade 26-70	.01⅝	.01⅞	.01⅞	.02
Grade 30-70	.01⅝		.01⅝	
NORTH TEXAS—				
Grade 18-55	.02¼		.02⅜	
Grade 26-70	.01⅝		.01⅞	
Grade 30-70	.01⅝	.01¾	.01⅝	
NORTH LOUISIANA—				
Grade 26-70	.02¼		.02¼	
CALIFORNIA—				
75-78 375	.04½	.05	.04½	.05

Note—Grades 18-55, 26-70 and 30-70 are three of 24 grades adopted by the Natural Gasoline Association of American effective January 1. The grades are based on pounds vapor pressure and amount evaporated at 140° F. While not exactly the same specifications apply, Grade 18-55 corresponds to the former Grade A, Grade 26-70 to former Grade AA and Grade 30-70 to former Grade BB.

KEROSENES

(All kerosenes water white)

OKLAHOMA (Group 3)—	May 31		May 24	
41-43	.03½	.03¾	.03¾	.04¼
42-44	.03⅝	.04	.04	.04⅜
NORTH TEXAS—				
40-41	.03¾	.03½	.03¾	.04
41-43	.03½		.03⅞	.04⅛
†NORTH LOUISIANA—				
41-43	.04	.04¼	.04¼	
42-44	.04¼	.04½	.04½	
†ARKANSAS—				
41-43	.04¼		.04¼	
PENNSYLVANIA (inland refineries)—				
45	.05	.05½	.05	.05½
46	.05	.05¼	.05	.05½
47	.05¼	.05½	.05¼	.05½
CHICAGO (Based on Group 3)—				
41-43	.03⅝	.03⅞	.03¾	.04
42-44	.03¾	.04	.03⅞	.04⅛
***CALIFORNIA—**				
38-40 high burning test	.04	.04¾	.04	.04¾
NEW YORK (Bayonne, N. J.)—				
41-43	.05½	.06	.05½	.06
GULF COAST (domestic)—				
41-43 water white	.04¼	.04½	.04¼	.04½

*For Pacific Coast consumption.
†For Arkansas, Louisiana and Mississippi delivery.

TRACTOR FUELS*

OKLAHOMA (Group 3)—	May 31		May 24	
39-40 prime white	.02⅜	.02½	.02⅜	.02½
38-40 light straw	.02⅛	.02¼	.02⅛	.02¼
NORTH TEXAS—				
38-40 light straw	.02⅛	.02¼	.02⅛	.02¼
CHICAGO (Based on Group 3)—				
38-40 light straw	.02⅛	.02⅜	.02⅛	.02⅜
PENNSYLVANIA (inland refineries)—				
41-43 prime white	.04	.04¼	.04	.04¼

*There are no standard specifications for tractor fuels. Grades commonly sold have flash under 175° F. (open cup) and under 575° F. endpoint and less than .2 per cent sulphur. Tractor fuels are available from all Mid-Continent refining groups at prices in line with the Oklahoma market taking into consideration differentials in freight rates.

FURNACE OILS*

OKLAHOMA (Group 3)—	May 31		May 24	
32-36 straw	.01⅝	.01⅞	.01¾	.01⅞
36-38 straw	.01¾	.02	.01¾	.02
38-40 straw	.01⅞	.02⅛	.01⅞	.02⅛
39-41 prime white	.02¼	.02½	.02¼	.02½
NORTH TEXAS—				
38-40 straw	.01⅞	.02	.02	.02⅛
†NORTH LOUISIANA—				
30-40	.02⅜	.02½	.02⅜	.02½
†ARKANSAS—				
32-36	.02⅜	.02½	.02⅜	.02½
CHICAGO (Based on Group 3)—				
32-36 straw	.01¾	.01⅞	.01¾	.01⅞
38-40 straw	.02	.02⅛	.02	.02⅛
PENNSYLVANIA (inland refineries)—				
40-41 prime white	.03½	.03¾	.03½	.03¾
NEW YORK (Bayonne, N. J.)—				
32-36	.04	.04½	.04	.04½
36-40	.05	.05½	.05	.05½

*Above prices are for furnace oils of zero cold test, under 190° F. flash and good odor.
†For Arkansas, Louisiana and Mississippi delivery.

GAS OIL, DIESEL OIL AND FUEL OIL

Gas oil (G.O.) quoted per gallon basis; Diesel oil and fuel oil per barrel.

OKLAHOMA (Group 3)—	May 31		May 24	
32-36 (G.O.) cracking stock	.01⅝	.01½	.01⅝	.01½
U.G.I. (G.O.)	.01⅝	.01½	.01¼	.01⅜
32-36, zero to 15 (G.O.) high flash	.01½	.01⅝	.01⅜	.01½
28-30, zero to 10	.50	.55	.50	.55
26-30, zero to 10	.50		.50	
24-26	.42½	.45	.42½	.45
20-22	.40	.45	.40	.45
16-20	.35	.40	.35	.40
Below 16	.32½	.35	.32½	.35
NORTH TEXAS—				
32-36 (G.O.) industrial	.01¼	.01⅜	.01¼	.01⅜
22-26	.45	.50	.45	.50
Below 20	.35	.45	.35	.45
†NORTH LOUISIANA—				
32-36 (G.O.) zero	.02¼	.02½	.02¼	.02½
14-16	.35	.40	.35	.45
†ARKANSAS—				
32-36 (G.O.) zero	.02¼	.02½	.02¼	.02½
14-16	.35	.40	.35	.45
CHICAGO (Based on Group 3)—				
32-36 (G.O.) industrial	.01⅜		.01¼	.01⅜
28-30 (zero)	.55	.60	.55	.60
22-26	.40	.45	.35	.40
18-22	.25	.30	.30	.35
Below 18	.22½	.27½	.25	.30
PENNSYLVANIA (inland refineries)—				
36-40	.03¼	.03½	.03¼	.03½

Note—Fuel oils of more than 40 cold test generally 5 to 10 cents per barrel less in all areas than shown in above tables.

†For Arkansas, Louisiana and Mississippi delivery.

CALIFORNIA—				
30-34 (G.O.) per bbl.	.65	.85	.65	.90
27 plus Diesel	.70	.85	.75	.90
15-19 Bunker (at tidewater)	.55	.75	.55	.75
15-19 Bunker (cargo lots)	.50	.65	.50	.65
15-19 (tank cars)	.45	.65	.45	.70
GULF COAST—				
28-30 (G.O.)	.03	.03⅛	.03	.03⅛
28-30 Diesel	1.35		1.35	
Bunker C (bulk cargoes)	.50	.55	.50	.55
Bunker C (bunkers)	.60		.60	
NEW YORK (Bayonne, N. J.)—				
28 plus (G.O.)	.04		.04	
*28-30 Diesel	1.40		1.40	
†Bunker C	.75		.75	

*Lighterage 6½ cents per barrel.
†Lighterage 5 cents per barrel.

PETROLEUM COKE*

Prices per ton f.o.b. refineries in Chicago area.

	May 31		May 24	
Breeze (screenings)	3.50	3.75	3.50	3.75
Still runs	4.50	4.75	4.50	4.75
Lump and egg	5.00	5.50	5.00	5.50

*Refiners will absorb freight up to 80 cents a ton.

NEUTRAL OILS

(Viscosity at 100° F. and Color)

OKLAHOMA (Group 3)—	May 31		May 24	
Zero to 10 Cold Test:				
150-3	.06¼	.06½	.06¼	.06½
180-3	.07½	.07¾	.07½	.07¾
180-4	.07	.07¼	.07	.07¼
200-3	.08¼	.08½	.08¼	.08½
200-4	.08	.08¼	.08	.08¼
240-3	.09¾	.10	.09¾	.10
240-4	.09	.09½	.09	.09½
280-3	.11¼	.11½	.11¼	.11½
280-4	.10¼	.10½	.10¼	.10½
300-3.5	.11⅝	.12	.11⅝	.12
350-3.5	.12¼	.12½	.12¼	.12½
400-4	.12⅝	.13	.12⅝	.13
500-4.5	.13¼	.13½	.13¼	.13½
100-2 Paraffin Oil	.04¼	.04½	.04¼	.04½
15-30 Cold Test:				
200-3	.07¾	.08	.07¾	.08
200-4	.07½	.07¾	.07½	.07¾
240-3	.09¼	.09½	.09¼	.09½
240-4	.08¾	.09	.08¾	.09
280-3	.10¾	.11	.10¾	.11
280-4	.09¾	.10	.09¾	.10
PENNSYLVANIA—				
150-vis., No. 3, 400-405:				
Zero pour test	.15	.16	.15	.16
10 pour test	.14	.15	.14	.15
15 pour test	.13½	.14½	.13½	.14½
25 pour test	.12¾	.13¼	.12¾	.13¼
30 pour test	.12¾	.13	.12¾	.13
180 vis., No. 3, 25 pour test	.15¾	.16½	.15¾	.16½
200 vis., No. 3:				
Zero pour test	.22	.23½	.22	.23½
10 pour test	.21	.22	.21	.22
15 pour test	.19½	.20	.19½	.20
25 pour test	.18	.18½	.18	.18½
30 pour test	.17¾	.18	.17¾	1.8
GULF COAST—				
Pale Oils:				
100-2-2½	.05		.05	
200-3	.06½		.06½	
300-3	.07		.07	
500-3½	.08	.08½	.08	.08½
750-3½	.09	.09½	.09	.09½
1,200-3½	.10½	.11	.10½	.11
2,000-4	.12	.12½	.12	.12½
Red Oils:				
200-5-6	.05	.05½	.05	.05½
300-5-6	.05½	.06	.05½	.06
500-5-6	.06¾	.07	.06¾	.07
1,200-5-6	.09½	.10	.09½	.10
2,000-6 plus	.11	.11½	.11	.11½

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

CALIFORNIA—

Pale Oils:

100-21½-3	.07¾	.08	.07¾	.08
200-21½-3	.07¾	.08	.07¾	.08
300-3-3½	.08¼	.08½	.08¼	.08½
350-3-4	.08¾	.09	.08¾	.09
400-3-4	.09¼	.09¾	.09¼	.09¾
450-3-4	.09¾	.10	.09¾	.10
550-3-4	.10¼	.11	.10¼	.11

Red Oils:

200-4½-5	.07	.07¼	.07	.07¼
300-5-6	.07½	.07¾	.07½	.07¾
350-5-6	.07¾	.08	.07¾	.08
400-5-6	.08		.08	
450-5-6	.08	.08¼	.08	.08¼
500-5-6	.08¼	.08½	.08¼	.08½
600-5-6½	.08¾	.09	.08¾	.09
700-6½ plus	.09		.09	
750-6½ plus	.09	.09½	.09	.09½
900-6½ plus	.13½	.14	.13½	.14

NEW YORK (Bayonne, N. J.)—

Paraffin Oil:

25 pale	.10¼	.10¼
28 pale	.07¼	.07¼
280 red	.12½	.12½
250 red	.11½	.11½
225 red	.10	.10
200 red	.09¼	.09¼

BRIGHT STOCKS AND STEAM REFINED STOCKS

OKLAHOMA (Group 3)—	May 31		May 24	
600 light green S.R.	.05	.06	.05	.06
600 dark green S.R.	.04	.04½	.04	.04½
Bright Stock:				
190-200 D	.22	.23	.22	.23
150-160 D, 0-10	.20¾	.21	.20¾	.21
150-160 D, 10-25	.20¼	.20½	.20¼	.20½
150-160 D, 25-40	.19¾	.20	.19¾	.20
150-160 E	.20		.20	
PENNSYLVANIA—				
600 S.R.	.14	.15	.14	.14½
650 S.R.	.16½	.17	.16½	.17
600 Pennsylvania flash	.17½	.18	.17½	.18
600 D filtered	.22½	.23	.22½	.23
600 E filtered	.17	.17½	.17	.17½
Pennsylvania Grade bright stock:				
Bright Stock, No. 8 color, 145-50 vis., 210-540-550 flash:				
10 pour test	.27½	.28½	.27½	.28½
15 pour test	.25	.26	.25	.26
25 pour test	.24	.24½	.24	.24½
35 pour test	.23½	.24	.23½	.24

WAX AND PETROLATUM

(Prices per pound)

OKLAHOMA (Group 3)—	May 31		May 24	
124-126 white crude scale	.01⅝	.01¾	.01⅝	.01¾
PENNSYLVANIA—				
122-124	.02		.02	
124-126	.02	.02¼	.02¼	
NEW YORK (Bayonne, N. J.)—				
Refined Wax:				
120-122	.02½		.02¾	
125-127	.03		.02⅞	
130-132	.03⅜		.03⅛	
133-135	.04		.04	
135-137	.04½		.04⅛	
Petrolatum in barrels in carload lots:				
Dark Green	.01¾		.01¾	
Amber	.02½		.02¼	
Extra amber	.02⅝		.02⅝	
Cream	.04⅝		.04⅝	
Lily white	.05⅛		.05⅛	
Snow white	.06⅛		.06⅛	

EXPORT PRICES

GASOLINE

GULF COAST—	May 31		May 24	
U. S. Motor	.04½		.05	.05¼
60-62 400	.04⅝		.05	.05½
61-63 390	.04¾		.05½	.05⅝
64-66 375	.05		.05½	.05¾
LOS ANGELES, CALIF.—				
U. S. Motor, 53-55 437 e.p.	.03¾	.04¼	.03¾	.04¼
U. S. Motor, 65 octane num.	.05		.05	
U. S. Motor, 67 octane num.	.05¼		.05¼	
U. S. Motor, 69 octane num.	.05½		.05½	
58-62 400 endpoint gasoline	.04¼	.05	.04¼	.05

KEROSENE

GULF COAST—				
41-43 prime white	.04⅜		.04⅜	
41 water white	.04½		.04½	
LOS ANGELES, CALIF.—				
41-43 water white	.03¾	.04¾	.03¾	.04¾

LUBRICANTS

NEW YORK (Bayonne, N. J.)—				
600, steam refined cylinder stocks, in bbls.	.21½	.22	.21	.22
650, steam refined	.24½	.25	.24	.25
600, Pennsylvania flash	.25	.26	.24	.25
630, Pennsylvania flash	.30½	.31	.30	.31
600, Warren E	.24	.25	.24	.25
600, Oil City E	.23	.24	.23	.24
Light 140-150 Bright Stocks	.31	.32	.30½	.31
Dark 140-150 Bright Stocks	.29½	.30½	.29	.30

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

East Texas (Apr. 1, 1932)† ..... $ .98
East Texas (April 11, 1932)‡ ..... .98
Corsicana heavy* ..... .64
Other fields ..... See gravity table

†Posted by Magnolia Petroleum Co., Sinclair Refining Co., Panola Pipe Line Co., Tidal Refining Co. and The Texas Company. ‡Gulf Pipe Line Co. and Atlas Pipe Line Co. *Magnolia Petroleum Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective April 25, 1932)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field) (Mar. 14, 1932) $2.02
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.75
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia) (Feb. 26, 1932) 1.70
Penna Grade Oil in Buckeye Pipe Line Lines (Mar. 12, 1932) 1.55
Corning Grade Oil in Buckeye Pipe Line Co.'s line (April 26, 1932) 1.05
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (Jan. 16, 1931) ... .60

Pennzoil Co.
(Effective April 25, 1932)

Pennsylvania Grade Oil in National Transit Lines:
Group A $1.97
Includes Cochran, Franklin, Hamilton and Doolittle districts.
Group B 1.96
Includes Titusville district.
Group C 1.95
Includes Turkey and Tidiout districts.
Group D 1.94
Includes Bear Creek and Porkey districts.
Group E 1.92
Includes Eldenau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jamesen, Kennerdell, Emlenton, Tiona, Lacy and Kinsua districts.
Price depends on length of pipe line haul to plant at Oil City.

Tide Water Pipe Co.
(Effective April 25, 1932)

Bradford, Pa. $2.02
Allegany, N. Y. 2.02

Pure Oil Co.
(Effective April 25, 1932)

Cabin Creek, W. Va. $1.70
Bradford Hollow, W. Va. 1.70
Kelly's Creek, W. Va. 1.70

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties ..... See gravity table

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

Ilse, light (Aug. 24, 1931) ..... $ .75
Ilse, heavy (Aug. 24, 1931) ..... .53
Fort Collins (April 11, 1932) ..... .86
Florence (April 11, 1932) ..... .80
Wellington (April 11, 1932) ..... .76
Greasewood Dome, Colo. (Apr. 11, 1932) 1.00
Dutton Creek (April 11, 1932) ..... .82
Rock Creek, Wyo. (April 11, 1932) 1.00
Frannis, light (Nov. 2, 1931) ..... .61
Frannis, heavy (Nov. 2, 1931) ..... .51
Salt Creek ..... Mid-Continent gravity table
LaBarge ..... Mid-Continent gravity scale
Big Muddy (April 11, 1932) ..... .98
Grass Creek (April 11, 1932) 1.20
Elk Basin (April 11, 1932) 1.20
Lance Creek (April 11, 1932) 1.15
Poison Spider (Mar. 5, 1931) ..... .70
Notches (Mar. 14, 1927) ..... .65
Hudson (June 2, 1931) ..... .65
Lander (Mar. 5, 1931) ..... .40
Rex Lake (Feb. 22, 1930) 1.10
Osage (Apr. 15, 1931) ..... .98
Lost Soldier (April 12, 1932) ..... .80
Hamilton Dome (Nov. 3, 1931) ..... .45
Greybull (April 11, 1932) 1.20
Cat Creek (April 11, 1932) 1.20
Pondera (Nov. 3, 1931) ..... .90
Sunburst, Mont. (April 11, 1932) 1.05
Hogback, N. Mex. (Aug. 24, 1931) ..... .80
Border, Mont. 1.55
Red Coulee, Alberta 1.55
Lea County, N. Mex. (Apr. 1, 1932)* .. .65
Maljamar (April 11, 1932) ..... .60
Artesia-Jackson (April 11, 1932) ..... .65

Note—Salt Creek, Cat Creek, Dry Creek, Dallas-Derby, Hudson, Greybull, Hogback and Ilse by Midwest Refining Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Lea County posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro Oil & Refining Co.

*Posted by The Texas Company. Humble Oil & Refining Co. met this price effective April 11.

WEST TEXAS

Iatan and Westbrook ..... Same as North Texas
Crane, Upton, Crockett, Howard, Glasscock, Mitchell, Ector, Winkler and Pecos Counties* ..... $ .65
Lea County, N. Mex. (See Rocky Mountain States).
Toborg, Pecos County (April 11, 1932)† .55

*Effective April 1, 1932, Magnolia Petroleum Co., The Texas Company. Effective April 11, Humble Oil & Refining Co. and Gulf Pipe Line Co. and Stanolind Oil & Gas Co. in Winkler County. †Shell Petroleum Corp.

GULF COAST

Grade A and Grade B classifications discontinued by leading buyers ..... See gravity table
Jennings, La. (April 11, 1932)* ..... $ .75
Lockport, La. ..... See Gulf Coast gravity table
Refugio, light ..... See gravity table
Refugio, heavy (April 11, 1932)‡ ..... .80
Markham (April 11, 1932)§ ..... See Gulf Coast gravity schedule
High Island (April 11, 1932)§ ..... See Gulf Coast gravity schedule

*Gulf Refining Co. †Magnolia Petroleum Co. ‡Humble Oil & Refining Co. §The Texas Company. ¶Yount Lee Pipe Line Co.

NORTH LOUISIANA AND ARKANSAS

Smackover, Ark. (al. grades) ..... $ .65
Urania, La. (April 12, 1932) ..... .60
East El Dorado, Ark. (April 6, 1932) .. .65
Stephens, Ark., below 29° (April 12, 1932) ..... .61
Stephens, Ark., 29° and above (April 12, 1932) ..... .64
Other fields ..... See gravity table

Note—Smackover, all grades, The Texas Company, April 1, 1932; Magnolia Petroleum Co., April 6, 1932; Standard Oil Co. of Loui-

(Continued on Next Page)

CRUDE OIL GRAVITY TABLE

	Kansas and Oklahoma	North and Central Texas	East Central Texas	Gray County, Texas	Carson and Hutchinson Counties, Texas	Salt Creek and LaBarge, Wyoming	North Louisiana and Arkansas	Gulf Coast (Texas-Louisiana)	Cameron Meadows, Louisiana	Iowa and Lockport, Louisiana
	1	2	3	4	5	6	7	8	9	10
Below 25 degrees	....	....	$.67	....	....	....	$.68	$.80	$.70	$.80
25-25.9 degrees	....	....	.67	....	....	....	.70	.81	.71	.81
26-26.9 degrees	....	....	.67	....	....	....	.72	.82	.72	.82
27-27.9 degrees	....	....	.67	....	....	....	.74	.83	.73	.83
28-28.9 degrees	....	....	.76	....	....	....	.76	.84	.74	.84
Below 29 degrees	$.76	$.76	....	....	....	$.76	....	....	....	....
29-29.9 degrees	.78	.78	.78	....	....	.78	.78	.85	.75	.85
30-30.9 degrees	.80	.80	.80	....	....	.80	.80	.86	.76	.86
31-31.9 degrees	.82	.82	.82	....	....	.82	.82	.87	.77	.87
32-32.9 degrees	.84	.84	.84	....	....	.84	.84	.88	.78	.88
33-33.9 degrees	.86	.86	.86	....	....	.86	.86	.89	.79	.89
34-34.9 degrees	.88	.88	.88	$.76	$.66	.88	.88	.90	.80	.90
35-35.9 degrees	.90	.90	.90	.78	.68	.90	.90	.91	.81	.91
36-36.9 degrees	.92	.92	.92	.80	.70	.92	.92	.92	.82	.92
37-37.9 degrees	.94	.94	.94	.82	.72	.94	.94	.94	.84	.94
38-38.9 degrees	.96	.96	.96	.84	.74	.94	.96	.96	.86	.96
39-39.9 degrees	.98	.98	.98	.86	.76	.94	.98	.98	.88	.98
40 degrees and over.	1.00	1.00	1.00	.88	.78	.94	1.00	1.00	.90	1.00

Note—Magnolia Petroleum Co.'s prices in Oklahoma, North Texas and Central Texas, effective April 1, are the same as above given in Columns 1 and 2, excepting that the schedule begins with below 28 degrees, 67 cents; 28-28.9 degrees, 76 cents. The Empire Pipe Line Co. met the Magnolia prices in Kansas and Oklahoma; the White Eagle Oil Corp. in Kansas and the Pure Oil Co., in Oklahoma.

Column 1—Effective April 1, 1932, Continental Oil Co. in Oklahoma and Kansas; Barnsdall Refineries, Inc., and Standish Oil Co. (Phillips Petroleum Co.), in Oklahoma and Kansas; Skelly Oil Co., Kanotex Refining Co., Derby Oil Co., Vickers Petroleum Co., in Kansas; Magnolia Petroleum Co. and Pure Oil Co., in Oklahoma (see note above); White Eagle Oil Corp., in Kansas (see note above); The Texas Company in Oklahoma. Effective April 11, 1932, Stanolind Crude Oil Purchasing Co. in Oklahoma and Kansas; Gypsy Oil Co., Mid-Continent Petroleum Corp., Champlin Refining Co., Eason Oil Co., Pepper Gasoline Co. and Carter Oil Co. in Oklahoma. Carter Oil Co.'s schedule begins at below 25 degrees, 68 cents, with 2 cents added for each degree upward.

Column 2—Continental Oil Co., effective April 1, in North Texas only; followed on same day by The Texas Company in North and Central Texas; Magnolia Petroleum Co. in North and Central Texas (see note above); effective April 11, the Humble Oil & Refining Co., Gulf Pipe Line Co. and Stanolind Crude Oil Purchasing Co.

Column 3—Effective April 1, 1932, the Magnolia Petroleum Co.; effective April 11, 1932, Humble Oil & Refining Co.

Column 4—Effective April 1, 1932, Magnolia Petroleum Co.; effective April 2, the Philtex Oil Co. (Phillips Petroleum Co.), but its schedule was carried down to below 30 degrees at 66 cents, with 2 cents added for each degree upward. Effective April 11, other companies met Continental schedule.

Column 5—Effective April 1, 1932, Magnolia Petroleum Co.; effective April 2, Philtex Oil Co., excepting that latter company carried its schedule down to below 30 degrees at 56 cents, with 2 cents added for each degree upward. Effective April 11, Continental Oil Co. and Gulf Pipe Line Co. met Magnolia Petroleum Co. prices.

Column 6—Midwest Refining Co., effective April 11, 1932.

Column 7—The Texas Company, effective April 1, 1932; Magnolia Petroleum Co., effective April 6, 1932; Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Stanolind Oil & Gas Co. (in Pine Island and Pleasant Hill and in Marion County, Texas) and Gulf Refining Co., effective April 11, 1932.

Column 8—The Texas Company, effective April 1, 1932; Sun Oil Co., April 1, 1932; Humble Oil & Refining Co., effective April 11, 1932; Gulf Pipe Line Co., effective April 11, 1932. Gulf's gravity scale ends with a top of 35 and above at 91 cents.

Column 9—Magnolia Petroleum Co., effective April 6, 1932.

Column 10—Magnolia Petroleum Co., effective April 6, 1932.

(California Crude Oil Prices on Page 39)

TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns May 31.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline: Tank wagon	Gasoline: Service station	Incl'ds tax of	Kero. tank wagon
Chicago	16.0	16.0	3.0	10.0
Decatur, Ill.	16.5	16.5	3.0	10.1
E. St. Louis	15.8	15.8	3.0	9.3
Joliet	16.5	16.5	3.0	10.1
Peoria	16.5	16.5	3.0	10.1
Quincy	16.2	16.2	3.0	9.9
Davenport, Ia.	16.6	16.6	3.0	10.4
Des Moines	16.6	16.6	3.0	10.4
Keokuk	16.6	16.6	3.0	10.4
Sioux City	16.2	16.2	3.0	10.0
Duluth, Minn.	17.6	17.6	3.0	11.0
Mankato	17.2	17.2	3.0	9.7
Minneapolis	17.3	17.3	3.0	11.0
LaCrosse, Wis.	18.3	18.3	4.0	11.1
Milwaukee	17.2	17.2	4.0	10.0
Madison	17.4	17.4	4.0	10.2
Detroit, Mich.	13.5	13.5	3.0	10.5
Grand Rapids	16.6	16.6	3.0	10.5
Saginaw	15.5	15.5	3.0	10.8
Evansville, Ind.	17.3	17.3	4.0	10.1
Indianapolis	17.3	17.3	4.0	10.1
South Bend	17.8	17.8	4.0	10.6
Fargo, N. D.	19.0	19.0	3.0	13.0
Huron, S. D.	18.4	18.4	4.0	11.8
Sioux Falls	17.9	17.9	4.0	11.5
K. C., Mo.	16.0	16.0	3.0	8.7
Springfield*	16.0	16.0	3.0	9.6
St. Louis*	15.5	15.5	3.0	9.4
St. Joseph	15.6	15.6	3.0	9.2
Wichita, Kans.	14.9	14.9	3.0	8.9
Bartlesville, Ok.	14.1	17.0	4.0	8.1

*State tax 2 cents, remainder city tax.

A third grade of gasoline, "Stanolind Blue," is sold at all major points at a price 1½ cents or more below the price on the regular grade.

Effective November 4—New dump discount applicable on all grades of gasoline sold from tank wagon. Any tank wagon customer buying 25 gallons or more at one time will be given 1-cent discount per gallon off tank wagon price at time of delivery. Customers not under contract receive no other discount.

Effective January 1—Discounts on Q.D.A. on 500 gallons or more per month throughout territory; Red Crown Ethyl Gasoline, 2 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind Blue gasoline, 1 cent off tank wagon price. On deliveries of 75,000 gallons or more each classification allowed 1 cent additional discount.

Discounts on resellers authorized agent's agreement; Same amounts as above except made off service station price instead of tank wagon price.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline: Tank wagon	Gasoline: Service station	Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	17.0	18.0	4.0	10.0
Fort Worth	17.9	18.0	4.0	9.0
Houston	16.0	19.0	4.0	10.0
San Antonio	16.0	18.0	4.0	9.0
El Paso	16.0	18.0	4.0	12.0
Texarkana	*18.5	18.5	4.0	†11.0
Muskogee, Ok.	15.0	17.0	4.0	9.0
Okla. City	15.0	17.0	4.0	9.0
Tulsa	15.0	17.0	4.0	9.0
Ft. Smith, Ark.	*18.5	18.5	6.0	†11.0
Little Rock	*19.5	*19.5	6.0	†11.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

*Less 2½ cents to dealers. †Less 2 cents to dealers.

PENNSYLVANIA-DELAWARE AND PART OF NEW ENGLAND

Atlantic Refining Co.

	Gasoline: Tank wagon	Gasoline: Service station	Incl'ds tax of	Kero. tank wagon
Pittsburgh, Pa.	16.0	17.0	3.0	11.0
Philadelphia	15.0	16.0	3.0	11.0
Scranton	16.0	17.0	3.0	11.0
Allentown	16.0	17.0	3.0	11.0
Altoona	16.0	17.0	3.0	11.0
Erie	16.0	17.0	3.0	11.0
Dover, Del.	16.0	17.0	3.0	11.0
Wilmington	16.0	17.0	3.0	11.0
Springf'd, Mass.	16.5	17.5	3.0	9.0
Worcester	16.3	17.3	3.0	9.0
Boston	15.5	16.5	3.0	9.0
Providence, R.I.	14.5	15.5	3.0	9.0
Hartford, Conn.	15.5	16.5	3.0	9.0
New Haven	15.6	16.6	3.0	9.0

OHIO

Standard Oil Co. (Ohio)

	Gasoline: Tank wagon	Gasoline: Service station	Incl'ds tax of	Kero. tank wagon
Ohio points	17.5	18.0	4.0	*12.0

Dealers and commercial accounts 2 cents under tank wagon.

*Service station price 13 cents.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline: Tank wagon	Gasoline: Service station	Incl'ds tax of	Kero. tank wagon
Denver, Colo.	17.0	20.0	4.0	13.5
Pueblo	17.0	20.0	4.0	13.0
Grand Jctn.	19.0	22.0	4.0	16.5
Casper, Wyo.	16.0	19.0	4.0	11.0
Cheyenne	16.0	18.0	4.0	12.5
Butte, Mont.	22.0	25.0	5.0	17.0
Billings	22.0	25.0	5.0	15.5
Great Falls	22.0	25.0	5.0	17.0
Helena	21.0	24.0	5.0	17.0
Salt Lake, Utah	18.5	21.5	4.0	16.0
Albu'que, N. M.	17.0	20.0	6.0	14.0
Boise, Idaho	†18.0	20.0	5.0	18.0
Twin Falls	19.0	22.0	5.0	18.0

*Two-cent discount off tank wagon to dealers.

†One-cent discount to dealers at time of delivery.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline: Tank wagon	Gasoline: Service station	Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.*	22.0	22.0	6.0	11.0
Augusta	22.0	22.0	6.0	14.5
Macon	22.0	22.0	6.0	13.0
Savannah	22.0	22.0	6.0	13.5
Birm'ham, Ala.	20.0	20.0	6.0	11.0
Mobile	22.0	22.0	6.0	10.0
Montgomery	22.0	22.0	6.0	14.5
Jackson, Miss.	19.5	19.0	5.0	11.5
Vicksburg	19.5	19.5	5.0	9.5
Jack'ville, Fla.	19.0	19.0	7.0	12.5
Miami	22.0	22.0	7.0	13.5
Pensacola	20.0	20.0	7.0	13.5
Tampa	21.0	21.0	7.0	9.5
Lexington, Ky.	18.5	19.5	5.0	10.5
Covington	18.5	19.5	5.0	10.5
Louisville	17.5	18.5	5.0	10.5
Paducah	18.5	19.5	5.0	8.5

A third grade "Kyso Green" is sold at a price generally 2 cents below the price on the regular grade.

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 3 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery and Birmingham state taxes add 1-cent tax. To Mobile state tax add 1-cent city tax and 2½ cents county tax.

Effective April 2 price to dealers 2 cents under posted tank wagon price.

*An additional discount of 1 cent is offered to dealers effective October 6.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline: Tank wagon	Gasoline: Service station	Incl'ds tax of	Kero. tank wagon
Atl'tic City, N.J.	16.4	16.9	3.0	11.2
Newark	15.7	16.2	3.0	8.5
Annapolis, Md.	17.0	17.5	4.0	10.0
Baltimore	16.4	16.9	4.0	7.0
Cumberland	17.9	18.4	4.0	11.7
Wash'g'n, D. C.	14.9	15.4	3.0	10.0
Danville, Va.	19.1	19.6	5.0	11.9
Norfolk	17.5	18.0	5.0	10.3
Petersburg	18.6	19.1	5.0	11.4
Richmond	17.9	18.4	5.0	10.7
Roanoke	19.1	19.6	5.0	11.9
Charles'n, W.Va.	17.8	18.3	4.0	11.6
Parkersburg	16.4	16.9	4.0	10.2
Wheeling	17.4	17.9	4.0	11.2
Charlotte, N. C.	20.7	21.2	6.0	12.5
Hickory	20.9	21.4	6.0	12.7
Mt. Airy	21.0	21.5	6.0	12.8
Raleigh	20.5	21.0	6.0	12.3
Salisbury	20.8	21.3	6.0	12.6
Charleston, S. C.	18.5	19.0	6.0	10.3
Columbia	20.4	20.9	6.0	12.2
Spartanburg	20.7	21.2	6.0	12.5

Two and one-half cents per gallon discount off tank wagon price of gasoline to dealers except Washington, D. C., and States of Maryland and New Jersey, where discount is 2½ cents.

Prices shown above are for standard gasoline.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	10.7	6.32
V.M.P. naphtha	12.7	7.32
Cleaners' naphtha	15.3	9.32
Stanisol	15.2	9.32

Tank wagon prices f.o.b. Chicago January 6, 1932. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline: Tank wagon	Gasoline: Service station	Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	15.5	16.5	3.0	10.0
New York*	12.5	12.5	3.0	9.5
Buffalo	16.5	17.5	3.0	9.0
Rochester	16.5	17.5	3.0	9.0
Syracuse	17.3	18.3	3.0	9.5
Boston, Mass.	15.0	16.0	3.0	9.0
Augusta, Me.	17.3	18.3	4.0	9.5
Manch'tr, N. H.	16.9	17.9	4.0	9.0
Burlington, Vt.	17.8	18.8	4.0	10.0

*Prices in steel barrels.

PACIFIC COAST TERRITORY

Standard Oil Co. of California*

	Gasoline: Tank truck†	Gasoline: Posted retail	Incl'ds tax of	Kero. tank wagon
Fresno	16.5	14.5	3.0	17.0
San Francisco	16.5	14.5	3.0	15.5
Los Angeles	16.0	14.0	3.0	15.5
Reno, Nev.	20.0	20.0	4.0	19.0
Portland, Ore.	17.5	16.5	4.0	16.5
Seattle, Wash.	18.5	17.5	5.0	16.5
Tacoma	18.5	17.5	5.0	16.5
Spokane	22.0	21.0	5.0	20.5
Phoenix, Ariz.	15.5	17.0	5.0	20.0

†Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

*Retail prices posted by Standard Stations, Inc., a subsidiary.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline: Tank wagon	Gasoline: Service station	Incl'ds tax of	Kero. tank wagon
N. Orleans, La.	19.0	19.0	6.0	†12.0
Baton Rouge	18.0	18.0	5.0	10.0
Alexandria	19.0	19.0	6.0	10.0
Lafayette*	19.0	19.0	6.0	†10.0
Lake Charles*	19.0	19.0	6.0	†12.0
Shreveport	18.0	18.0	5.0	†12.0
Knoxville, Tenn.	22.0	22.0	7.0	13.5
Memphis	20.5	20.5	7.0	11.0
Chattanooga	22.0	22.0	7.0	13.5
Nashville	21.5	21.5	7.0	13.0
Bristol	20.5	20.5	7.0	14.0
Lt. Rock, Ark.	19.0	19.0	6.0	11.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Kerosene prices in Louisiana include 1-cent tax except New Orleans where tax is 2 cents.

Two-cent discount off gasoline and kerosene tank wagon price to dealer and commercial accounts.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline: Tank wagon	Gasoline: Service station	Incl'ds tax of	Kero. tank wagon
Omaha	15.9	16.9	4.0	10.25
McCook	17.0	17.0	4.0	11.75
Norfolk	17.75	18.75	4.0	10.75
N. Platte	18.0	18.0	4.0	11.5
Scottsbluff	17.0	17.0	4.0	11.25

Note—Dealers' discount allowed as follows: Red Crown Ethyl, 3 cents off station price; Red Crown, 2½ cents off normal service station price; Nebraska Blue (third grade), 1 cent off normal service station price.

STANOLIND FURNACE OIL IN CHICAGO

Effective July 1, prices f.o.b. Chicago, tank wagon prices: 1 to 99 gallons, 8 cents; 100 gallons or more, 6 cents.

Stanolex Fuel

Effective May 9, f.o.b. Chicago, tank wagon prices: 1 to 199 gallons, 7 cents; 200 gallons or more, 5 cents. Sinclair met this by bringing down the price of its No. 3.

Fuel Oils

Chicago tank wagon prices (in lots of 400 gallons and over): 28-40 straw distillate, 6 cents; 32-36 gas oil (light zero), 5.5 cents; 32-36 gas oil (industrial), 5.25 cents; 28-30 zero fuel oil, 5 cents; 24-26 fuel oil, 4.25 cents; 18-22 fuel oil, 3.75 cents.

TANK WAGON CHANGES

Continental Oil Co., effective May 19, advanced gasoline tank wagon and service station prices 1 cent at Great Falls, Mont.

Standard Oil Co. (Kentucky), effective May 18, reduced kerosene tank wagon price 2 cents and gasoline tank wagon and service station prices 1½ cents at Birmingham, Ala. Effective May 16, company advanced kerosene tank wagon price 2 cents at Jacksonville, Fla.

Standard Oil Co. of California, effective May 24, advanced gasoline wholesale prices 1½ cents at Portland, Ore., Seattle and Tacoma, Wash., and 1 cent at Phoenix, Ariz. Effective same date company reduced gasoline wholesale price one-half cent at Spokane, Wash. Standard Stations, Inc. (Standard Oil Co. of California), effective May 24, advanced gasoline retail prices 1½ cents at Portland, Ore., Seattle and Tacoma, Wash.

Standard Oil Co. of Louisiana, effective May 23, reduced gasoline tank wagon and service station prices one-half cent in Louisiana, Arkansas and Tennessee. Company effective May 18 reduced kerosene tank wagon price 2 cents at Baton Rouge, La.

CRUDE OIL PRICE CHANGES

Effective May 24, 1932, the Associated Oil Co. posted the following crude oil prices in the Coalinga, California, Field: 11 to 13.9 gravity, 50 cents; 14 to 24.9 gravity, 55 cents; 25 gravity and above, 57 cents. This is a different schedule than that of the Standard Oil Co. and the Union Oil Co. each of which pays 55 cents for all grades below 25 gravity and 57 cents for oil 25 gravity and above.

CRUDE OIL PRICES

(Continued from Preceding Page)

siana, Gulf Refining Co. and Louisiana Oil Refining Co., April 11, 1932. Urania posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co.; East El Dorado by Magnolia Petroleum Co., effective April 6, 1932; by Gulf Refining Co., effective April 11, 1932; Stephens, Ark., by Louisiana Oil Refining Co. and Atlantic Oil Producing Co.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Apr. 1, 1932)*	$ .75
Luling (Apr. 1, 1932)*	.64
Mirando (Apr. 1, 1932)*	.90
Pettus (Apr. 11, 1932)‡	1.00
Salt Flat (Apr. 11, 1932)‡	.75
Thrall‖	
Lytton Springs (Lockhart) (Apr. 1, 1932)*	.94
Dobrowolski¶	
Same as Mid-Continent gravity scale up to and including 38-38.9°	
Sumarset¶	
Same as Mid-Continent gravity scale up to and including 38-38.9°	

*Magnolia Petroleum Co., The Texas Company, Humble Oil & Refining Co. posted 80 cents for Mirando, April 11. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. ¶Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products. ‖Pioneer Oil & Refining Co. ‡Humble Oil & Refining Co.

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective April 11, 1932)

Lima	$1.15
Wooster	1.25
Illinois	1.10
Indiana	.75
Princeton	1.10
Plymouth	Shut in
Western Kentucky	1.05
Midland, Mich. (May 17, 1932)*	.65
Dundee, Mich.†	
Same as Stanolind Crude Oil Purchasing Co.'s Mid-Continent gravity scale Upper and Lower Traverse Sands, Mich.†	
....Same as Mid-Continent gravity scale	
Somerset, Ky. (Apr. 25, 1932)	.85
Hart County, Ky. (Apr. 16, 1932)‡	.85

*Posted by Pure Oil Co. †Posted by Standard of Indiana for boat shipment. ‡Posted by Stoll Refining Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and delivered through own pipe line.

MEXICO

Panuco*	$ .47

*F.o.b. ship, based on April transactions and exclusive of production and export taxes and bar dues.

CANADA

Ontario (Nov. 3, 1931):	
Petrolia*	$1.90
Oil Springs*	1.97
Alberta (Apr. 22, 1932):	
Turner Valley†:	
Crude oil 40-44.9	1.56
Crude oil 45-48.9	2.18
Crude oil 50 and above	2.80
Crude naphtha	3.32
Discolored naphtha	3.08

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Of Interest to Sales Departments

TWO LARGE FIRESTONE STATIONS IN CHICAGO

CHICAGO, May 28. — The second of two superservice stations in Chicago will be completed this month by Firestone Tire & Rubber Co. at a total cost of approximately $550,000. The larger structure is already in use at Wabash Avenue and East Sixteenth Street, and houses the district offices. This is a three-story building and has accommodations on the ground floor, fronting 170 feet on East Sixteenth Street and 164 feet on Wabash Avenue, for servicing 50 automobiles at one time. The 13 gasoline pumps are covered by an ornamental brass trim canopy. There is a track siding from the elevated railroad by which cars can be loaded from the second floor.

The smaller construction, costing $150,000, extends 175 feet on Kostner Avenue and 100 feet on West Madison Avenue. Equipment has been installed for servicing 40 cars at one time. The gasoline pumps, numbering 16, are canopied as in the larger building. There are 20,740 square feet of space in the service store. While the gasolines sold at these service stations will be those of The Texas Company, three brands of lubricating oils will be offered, Texaco, Vacuum and Quaker State. Normal prices will be in effect.

PETROLEUM IMPORTS OF UNITED KINGDOM GAIN

NEW YORK, May 28. — Imports of crude and refined petroleum into the United Kingdom during April aggregated 193,089,602 gallons, compared with 184,958,225 gallons in April last year, according to returns compiled by the British Board of Trade. The month's imports, with comparison for April last year, were made up of the following quantities:

	Gallons	
	Apr., 1932	Apr., 1931
Gasoline	78,166,958	69,756,321
Kerosene	23,218,161	20,137,724
Lub oil	12,736,463	8,175,601
Gas oil	9,492,979	9,736,177
Fuel oil	44,256,168	33,994,593
Crude oil	24,626,505	41,471,482
Miscellaneous	594,368	1,636,327

The sharp drop in crude oil imports was the principal feature of the month, indicating continued inactivity of the British refining industry, which has been operating far below capacity for several years past.

Total imports during the first four months of 1932 amounted to 733,182,744 gallons, compared with 770,539,861 gallons in the corresponding months of 1931.

SKELLY OPENS STATIONS

WICHITA, Kans., May 31.—The Skelly Oil Co. yesterday and today formally opened the largest master service station in this city. The station which is located in the downtown section occupies approximately one-fourth block. It is the twentieth station of the master type to be built by the Skelly company which has large distributing facilities in several states west of the Mississippi River.

The local station in addition to handling a complete line of Skelly petroleum products will sell Firestone tires and Skelco batteries. J. P. McCann has been appointed manager of the local station.

FORM LONGSHORE CORPORATION

C. H. Longshore, who has been engaged in petroleum marketing for many years, has organized the Longshore Petroleum Corp. for the purpose of conducting a general marketing business for both export and domestic movement. Offices are located at 89 Broad Street, New York, N. Y.

PRESENT NEW CONCEPTION OF MECHANISM OF LUBRICATION

As an outcome of the work of the lubrication engineering committee of the American Society of Mechanical Engineers, a new theory of the mechanism of lubrication has been developed and was presented to an informal conference at the Engineering Society Building on June 1 under the auspices of the A.S.M.E.

The practical importance of this theory lies in the fact that it proposed novel bases for the evaluation of the lubricating properties of oils and greases and, incidentally, offers an explanation for a number of matters that have been puzzling lubrication engineers in the past. The development of this theory has been made possible by discoveries of new features in the behavior of lubricants which in turn have been made possible through tests made on a new machine for investigating phenomena of lubrication erected by the Sperry Gyroscope Co.

The new theory of lubrication offers factual support for the discoveries of German investigators, such as Viewig, to the effect that lubricating properties of oil as such are not determined by the viscosity of the oil. It also offers experimental proof of the correctness of Langmuir's theory under which a layer of lubricant one molecule thick is held by chemical forces at the face of the metal, as well as the theory of French investigators supported by Sir J. J. Thompson, the famous British physicist, to the effect that a comparatively heavy layer of oil is held to the face of the metal by electrical or magnetic fields.

With the new machine, not only has the actual presence of these layers been confirmed but the lubricant has been found to peel off layer after layer. It has been further discovered that we finally reach an "ultimate" layer which does not peel off, even when enormous disruptive forces have been applied to it. Another startling discovery has been that if the ultimate layer is wiped off the face of the metal a new layer of lubricant is immediately created thereon and, for example, in the case of a steel lubricated surface, as many as 21 layers of oil has been wiped off where the presence of even a single fluid layer has never been suspected before.

With these and certain other facts as a foundation, a new picture of the mechanism of lubrication has been built up. Briefly, according to this theory a layer of oil is formed on the surface of the metal, the thickness and strength characteristics of this layer being determined by the character of the lubricant, and the character of the metal. This layer, in turn, pumps up under an enormous pressure of oil into the crevices of the metal. (This is in accord with the most modern conceptions of phenomena of adsorption.) In the course of contact with the bearing surfaces on the journal and the brasses (the same especially applies to ball and roller bearings as well as Kingsbury bearings), the free film plays no part as a means of separating the surfaces of the metal. This is done by the newly discovered powerful adhering layers of lubricant and when, in the course of operation of the bearing, these are wiped off, they are immediately re-

(Continued on Page 54)

EXPLAIN MONOPOLY IN NEWFOUNDLAND SALES

CHATHAM, Ontario, May 28. — An agreement has been completed whereby Imperial Oil, Ltd., is given a monopoly of the gasoline and oil products business in Newfoundland in return for the purchase of $1,750,000 of 5½ per cent government bonds at 97. According to a semiofficial statement, the company under free market conditions already controlled 95 per cent of the Newfoundland business.

Under the agreement a petroleum realization fund will be created out of royalties of 8 cents a gallon on gasoline sold. This fund will be administered by outside trustees. Imperial Oil agreed to make the laid down price of gasoline in Newfoundland 8 cents a gallon, based on the day-to-day Mid-Continent posted prices for crude; and in spite of an advance of 15 cents a barrel in crude this price still obtains, subject to further upward or downward change, however. In addition to the 8-cent laid-down price at St. John's there is the royalty of 8 cents a gallon to which is added a further 8 cents to cover distributing costs, profits and losses through bad debts and otherwise.

The company's business is largely credit and early payment depends in great measure on the success of the fishermen. Imperial Oil, Ltd., products are supplied to Newfoundland from the company's Halifax, N. S., refinery.

GASOLINE PUMP REGULATION

CHATHAM, Ontario, May 28.—A new order of the Ontario highways department requires that gasoline pumps installed in future be not less than 50 feet from a highway, instead of 25 feet as heretofore.

COMPLETE PETROLEUM HANDBOOK AVAILABLE

The Petroleum Code Handbook for 1932, which was released by the publishers early in the month, makes available for the first time a register of 16,000 refining and marketing companies and service station owners in every state signing the marketing code of ethics and representing probably 90 per cent of the petroleum marketing industry.

The handbook shows service chains; a selected list of 5,000 jobbers in every state; personnel of code committees, marketing committees and gasoline tax evasion committees, and officers and directors of marketing associations. It is divided into eight reference sections covering every phase of marketing gasolines and oils, including gasoline and oil buyer's guide and equipment buyer's guide.

L. M. Fanning, for several years director of Public Relations Department of the American Petroleum Institute, is editor and publisher of the handbook. The handbook sells for $5 per copy. Headquarters of the publishers are in Room 413 Chanin Building, 122 East Forty-second Street, New York.

BUILD HEATING OIL PLANTS

CHICAGO, May 28. — North Shore Petroleum Co. has started construction of two heating oil bulk plants to serve north and west suburban towns. The capacity at each plant will be 300,000 gallons, and the cost of the two units will be $25,000, according to Samuel Nanini, president of the company. One of the plants will be located in Forest Park on Desplaines Avenue at the Chicago, Aurora & Elgin tracks, and the other plant is under construction in Northbrook, on Dundee Road at the Chicago, North Shore & Milwaukee tracks.

REPORT SHOWS TREND IN MOTOR FUEL TAXES

NEW YORK, May 28.—American motorists paid a record high total of $536,397,458 net in state gasoline taxes during 1931, or $42,532,341 more than the $493,865,117 net of 1930, it is shown in reports of the U. S. Bureau of Public Roads issued during the past week.

Payment of this levy, which represented an average of more than $20 for every vehicle registered in 1931, brought the total contribution of motorists, ostensibly to the cause of good roads, to $2,501,544,522 since 1919, when the gasoline tax was inaugurated.

Strange as it may seem, this record total was paid by fewer motorists, for bureau records indicate that only 25,814,103 motor vehicles were registered in 1931, a decrease of 731,178 from the 26,545,281 registration of 1930. Further, this record total paid by fewer motorists represents only a portion of their gasoline tax bill, for in several states counties and communities also are collecting such taxes, the total of which is unknown but is estimated in millions of dollars. An estimate of $2,000,000, regarded as conservative, would lift the total net gasoline tax to $538,397,458. The motorists' tax bill further is increased by the payment of $344,337,654 in 1931 license and registration fees. The grand total thus becomes $882,735,112. Even this is not all. Many states impose additional taxes upon motorist, vehicle, or necessities of operation, these probably raising the tax bill to more than $1,000,000,000.

The gross state gasoline tax collected in 1931 amounted to $569,809,232, an increase of $64,750,896 over the gross collections of $505,058,336 in 1930. Exemption claims in 1931 rose to a record peak of $33,391,774, the increase of $4,284,903 over the $29,106,871 total exemptions of 1930 reflecting the additional claims filed by consumers of gasoline because of increases in tax rates and general business conditions. Some states also have been having difficulty with fraudulent refund claims, the total loss through which cannot be ascertained.

The cost of collection and administration in 1931 was nearly double that of 1930, or $2,117,317 as compared with $1,102,187. This gain also reflected the increased and costly difficulties many states have encountered in enforcing the gasoline tax law and collecting the levy at higher rates.

Diversion of gasoline tax funds from highway construction and maintenance, the purposes for which the levy originally was imposed, pursued the upward trend begun some years ago. Total diversion in 1931 was $38,892,625, or $11,513,639 more than the $27,378,986 diversion of the year 1930.

GAS TAX COLLECTIONS GAIN IN TWO STATES

CHICAGO, May 31.—In spite of decreased gasoline consumption evident to the industry, first quarter gasoline excise tax collections in Michigan and Illinois showed fair increases. Collections for the first quarter of this year in Michigan showed an increase of $246,319 over the same period last year, while in Illinois $134,740 more were collected in the first quarter this year than last year.

An audit is being made of the books and records in the finance department of the State (handling gasoline taxes), in the railroad company offices, and in the offices of gasoline distributors. From an official source today it was learned that the audit at this time reveals losses to the State in excess of $1,200,000 in the period 1929 to October, 1931.

Brief Items for Petroleum Refiners

Indiana Standard To Fight Michigan Ouster in Courts

The Standard Oil Co. (Indiana) will fight in the courts the attempt of the State of Michigan to collect gasoline taxes alleged to be due the State by the company. The announcement of the Standard of Indiana's position on Saturday followed a statement by the Michigan secretary of state that the Indiana Standard owed the State $1,599,815 in back gasoline taxes and that the company must pay this sum to the State by May 31 or close its 1,497 service stations in the State.

In a prepared statement, Frank D. Fitzgerald, secretary of state said:

"During September of 1928, a Detroit accounting firm was employed to audit the company's (Standard of Indiana) books and records. This audit disclosed the amount of unpaid tax due as of that date to be $1,441,191. In April, 1929, a check for $574,995 was accepted by the State, presumably to apply on the account. This left an apparent discrepancy of $886,196. Soon after assuming office, I called the matter of this apparent unpaid balance to the attention of the company officials pursuant to which a statement was filed by the company with this department purporting to show that this unpaid balance was not an obligation on its part.

"To clear up this point, I employed the accounting firm to conduct a further audit and submit a report up to March 31, 1932. The audit discloses the sum due to the State."

Standard's Statement

The following statement was issued by the Standard Oil Co. (Indiana):

"The action by the Michigan state officials is an attempt to force the Standard Oil Co. to pay taxes upon gasoline on a basis other than that provided by the Michigan law. On advice of its attorneys the company will submit the question at issue to the Michigan courts.

"After providing the manner in which the gasoline taxes shall be collected, the Michigan law specifies that there shall be a deduction of 3 per cent to allow for evaporation and loss.

"The Standard Oil Co. has been taking this 3 per cent deduction allowed by the law. Other companies have been doing the same thing. The Michigan authorities have decided they are going to collect the tax from the Standard Oil Co. on a different basis and one which would be much more expensive to the company. They are not attempting to enforce the law in the same way against any other company. Under these circumstances the company will naturally resist in the courts the attempts of the Michigan officials to enforce their special interpretation of the gasoline tax law against this company alone."

BUILDING NEW PLANT NORTH CENTRAL TEXAS

FORT WORTH, Tex., May 31.—John Schroeder and Bruce Young of Grandfield, Okla., and T. S. Stoneman of Fort Worth are erecting a 500-bbl. refinery at Pilot Point in north Texas and will process crude produced in the small shallow low gravity pool 4 miles northwest of the town, taking oil from Danciger Oil & Refining Co. and other properties.

The plant will have a capacity of 500 bbls. A 4-inch line formerly used by the Texas Pacific Coal & Oil Co., which shipped out crude to its Fort Worth refinery from the pool, will be used in connecting the pool.

GREATER COOLING OF ENGINES AIDS ANTIKNOCK MOTOR FUELS

Using soap suds to cool the piston and circulating water to cool the exhaust valve, engineers in the Detroit laboratory of the Ethyl Gasoline Corp. have succeeded in increasing the power output of an experimental high compression engine by one-third. These tests, showing the need for greater cooling of engines to secure full advantage of antiknock fuels, forecast the direction which automobile engine design will probably take in the future, according to Earl Bartholomew, director of the laboratory.

While the tests, to be useful in practice, require translation into practicable engines in cars, they demonstrate that much can yet be accomplished in improving the performance of even the best present-day engines, Mr. Bartholomew pointed out.

"Our studies were made to determine the effect on power output of abnormal cooling of the exhaust and piston of a single-cylinder engine 3¼ by 5 inches, he explained. "The compression ratio of the engine was so adjusted that when the engine operated without special cooling it was necessary, in order to prevent detonation, partially to close the throttle.

"An internally water cooled valve, so arranged that cooling water could be circulated through it, permitted an increase in the engine's power output by 8 per cent. This result was obtained at the theoretical mixture strength for the same freedom from detonation on the fuel used for the test.

"The use of soap suds as a crankcase lubricant, in connection with spraying the lubricant in copious quantities on the under side of the piston, accomplished an increase of 25 per cent in the power output of the engine on the same fuel without detonation. A combination of these two types of cooling increased by one-third the power output of this same engine at a 15-to-1 air-fuel ratio.

"These increases in power output are less pronounced when richer mixtures are used. Hence it is apparent that the gains due to exceptional cooling are greater in engines which are designed to operate most economically.

"Data obtained on a single cylinder engine may appear to be only of academic interest in as much as such well-cooled valves and pistons are not now commercially available. These experiments, however, do point the way for future engine design developments.

"Internally cooled valves which have hollow heads as well as stems have recently been developed. A great advance in engine efficiency will come about when means are found to cool pistons more efficiently by some method other than contact with the cylinders and lubricating oil."

ELECT MAJOR ALDRIN STANAVO PRESIDENT

NEW YORK, May 28.—Major E. E. Aldrin, aviation manager for the Standard Oil Co. of New Jersey, has been elected president of the Stanavo Specification Board, Inc. Other officers elected by the board, which has just concluded its eighth annual meeting at Dayton, Ohio, were as follows: Vice president, Capt. S. S. Chadderton and J. P. Porter; treasurer, R. P. Resor; secretary, H. M. McLarin; executive secretary, Shepard Dudley.

During the course of the meeting, the board recessed to pay a visit of inspection to the Army Air Corps Laboratories at Wright Field, where a program of testing and research work on aviation fuels and lubricants is being carried on by the Air Corps technicians, in collaboration with the Stanavo Board technical committees.

Major Aldrin, who was largely responsible for the organization of the Stanavo Specifications Board, has been a vice president and director of the company since its organization in 1929. In promoting the policies and purposes of the board he has been actively and prominently identified with every progressive phase of the development of aviation petroleum products. For two years Major Aldrin served, as chairman of the executive committee of the Fuel and Lubricants Section of the Aeronautical Chamber of Commerce. He is still an active member of this committee and also of the S.A.E. and A.S.T.M. committees on fuels.

JENKINS AWARDED JUDGMENT

MILWAUKEE, Wis., May 27.—Jenkins Petroleum Process Co., of Chicago, was awarded judgment of $150,067, in Federal District Court here today, against Eason Oil Co., Enid, Okla. Suit had been brought by the Jenkins company to collect this sum alleged due on royalties withheld since July, 1927.

NEW DENVER REFINERY TO START OPERATING

The Midland Oil Refining Co. expects to make test runs next week at its new refinery located at Denver, Colo. The plant, which will have an initial crude oil charging capacity of 1,000 bbls. daily, is located on the Brighton-Denver highway opposite the refinery of the Continental Oil Co. which was built in 1930. The plant will be served by the Union Pacific and Market Street line of the Burlington Railroad.

Part of the crude oil supply for the refinery will come from company leases in the Osage Field of Wyoming. The company owns a small cracking plant located at Osage. The new plant is being installed by the Radial Hydrocarbon Processes of New York City. The products of the plant will be sold locally. Logan M. Hines of Denver is president of the company.

BUY INTEREST IN PLANT

NEW YORK, May 28.—Shell and Standard of New Jersey interests in Germany have acquired from Gewerkschaft Elwerath approximately 300 of the 1,000 shares of the Deurag refinery at Misburg in Hanover, according to reports from Berlin.

Rhenania-Ossag Mineralolwerke and Deutsch-Amerikanische Petroleum Gesellschaft, the two subsidiaries involved, have arranged to market part of the products of the Misburg refinery. Both companies have crude production in Germany, but the Misburg refinery will run on crude produced on the properties of Gewerkschaft Elwerath and "Preussag" companies before taking in outside production.

RUSH CRACKING PLANT

CHATHAM, Ontario, May 28.—Two daylight shifts are being employed by the Hope Engineering Co. on the new construction of the cracking unit of the Northwestern Stellarene Co. refinery at Coutts, Alberta.

Plan Improvements For Marathon Plant At Fort Worth, Tex.

FORT WORTH, Tex., May 31.—Several officials of the Ohio Oil Co. and subsidiary companies visited here yesterday and it was stated that plans were discussed for enlarging and improving the local refinery of the Marathon Oil Co. The Marathon company is a refining and marketing subsidiary of the Ohio company formerly operated under the name of the Transcontinental Oil Co. The company has refineries located at Fort Worth and Del Rio, Tex., and Bristow and Boynton, Okla. It is understood that the company also expects to make extensive improvements at the Bristow refinery.

The local refinery which serves Marathon stations and jobbers in this territory has a crude oil capacity of 5,000 bbls. daily. It has facilities for manufacturing a complete line of lubricants. The new equipment to be installed includes cracking units. No date has been set for starting the work.

Among the officials present here were O. D. Donnell, Findlay, Ohio, president of Ohio Oil Co.; R. J. Berry, Findlay, president of Mid-Kansas Oil & Gas Co. and vice president of Ohio Oil Co.; J. K. Kerr, Marshall, Ill., vice president of Ohio company; John McFadyen, Casper, Wyo., vice president; W. W. Fleming, Tulsa director of Ohio and vice president of Marathon and Mid-Kansas companies; E. B. Redpath, Findlay, secretary of Ohio, and C. S. Sherk of Findlay, purchasing agent.

NAVY PRICES REFLECT BETTER FUEL MARKET

NEW YORK, May 31.—The improved position of the bunker oil market was reflected in the awarding of contracts by the Navy Department for some 1,000,000 bbls. of fuel oil for delivery at various naval bases on the Atlantic Seaboard.

The more important awards made by the bureau of supplies and accounts of the Navy Department were as follows: Diesel oil—Colonial Beacon Oil Co., 15,000 bbls., $25,930; Standard Oil Co. of New Jersey, 4,500 bbls., $7,260; Sinclair Refining Co., 4,000 bbls., 6,720; Continental Oil Co., 20,000 bbls., $36,980.

Bunker "C" oil—Standard Oil Co. of New Jersey, 115,000 bbls., $88,625; Colonial Beacon Oil Co., 20,000 bbls., $13,000; Gulf Refining Co., 50,000 bbls., $45,000; Magnolia Petroleum Co., 30,000 bbls., $17,400.

Grade "A" fuel oil—Gulf Refining Co., 300,000 bbls., $178,000; Colonial Beacon Oil Co., 125,000 bbls., $141,250; Atlantic Refining Co., 126,800 bbls., $109,990; Standard Oil Co. of New Jersey 155,600 bbls., $163,380.

PLAN GERMAN REFINERY

NEW YORK, May 28.—Magdalena Syndicate Corp., which recently closed a deal for considerable German acreage, has announced tentative plans in Germany for the building of a refinery.

The proposed plant, to be erected "ultimately," will have throughput of approximately 5,000 bbls. daily, and will cost approximately 7,000,000 marks, of which 6,000,000 marks are to be supplied by American capital.

LET THE TOURIST BEWARE

"How's your farm work coming?"

"Oh, fine! Got the billboard and hot dog stand painted, and the filling station stock full of gas."—Capper's Weekly.

A

Message from

GRAVER

To You Men . . .
of the American Petroleum Industry . . .

. . . to the executives who are carrying the burdens—the heavy problems.

. . . to you whose courage will soon push the industry upward to new heights.

Your Job is to solve the Industry's problems.

Graver's Job is to provide means, methods and materials that form part of that solution.

Graver is ready to work for you today, as it has for more than half a century, and offers these efficient aids in your present difficulties:

Engineers
trained to your business can save you money on storage and distribution problems.

Experience
is backed by more than half a century of able and efficient service to all branches of the Petroleum Industry.

Facilities
for manufacturing, fabricating and field erection are not excelled.

Representatives
who know the oil industry thoroughly.

Reliability
assures you of complete and satisfactory performance and workmanship.
"Graver Builds It Right".

Complete Line
for handling Petroleum Products includes: Field Erected Storage; Refinery Equipment; Bulk and Service Station Tanks; Truck Tanks and Distributing Accessories.

GRAVER TANK & MFG. CORP.

General Offices and Plant: East Chicago, Indiana

A competent organization seeks to serve on special steel plate construction, or in connection with water treating equipment.

Manufacture of Natural Gasoline

Summarize Work Of Specification Committee for Year

In summarizing the work of the specifications committee for the Natural Gasoline Association of America at its annual meeting in Tulsa a week ago, R. E. Baker of the Shell Petroleum Corp., chairman, stated in part: "The duties of the Specifications Committee for the past year have been rather light. The heavy work was carried to completion during the two preceding years. The results of this work were thoroughly covered in papers and discussion at the 1930 and 1931 meetings of the association. It fell to the lot of the present committee to carry on after the completion of the above two years of serious endeavor. Nothing was left for it to do but await developments after the new specifications had been put into operation.

"The policy was adopted of having the new specifications run concurrently with the old for the year 1931, and not to become effective until January 1, 1932. This was for the purpose of permitting the buyers to familiarize themselves with the new grades and compare them with the old. This policy did not work out so well in practice. Apparently, little study was made of the new specifications during 1931. This is an obvious conclusion from the number and nature of the inquiries that swamped our secretary during the month of January of this year. The answers to most of these inquiries had been known for more than two years by the members of the committee working on the problem. In order to simplify the answering of these questions, your specifications committee worked up and had printed a card outlining the new grading system, general specifications and testing methods. Many copies of this card have been distributed by our secretary.

"Few, if any, valid criticisms have been raised against the new grading system. Those that have been raised have been due either to a lack of understanding or the desire on the part of the buyer to obtain 18 to 22-pound vapor pressure gasoline for 26-pound gasoline prices.

"The 26-70 grade was adopted as a basic grade for two reasons: The first and chief reason was that in our previous survey we found that the majority of old grade AA gasoline fell within this classification. The second reason is that the composition of the product is fairly closely defined. It can be depended on being approximately propane free and having a butane content of about 35 per cent.

"It seems necessary to reiterate that the new grading system has placed in the hands of the buyer an instrument whereby he can select intelligently a gasoline to meet his particular requirements and predict the results he will get by blending this product. If he desires to use a product of reduced butane content, all that he has to do is check over the grading system and select the required product.

"It is confidently expected that by the end of the current year, when the industry has become accustomed to trading under the new system, most of the seeming objections to it will have disappeared.'

MOVE MIDLAND OFFICES

The Midland Gasoline Co. has moved its general offices from Coleman, Tex., to Fort Worth, and is now located in its new offices at 1100 Trinity Life Building.

A branch office will be retained at the company's gasoline plant at Coleman. F. C. Nickel, president, and Charles Mercer, assistant treasurer, will be in charge of the office at Fort Worth.

FORMULATING PLANS TO IMPROVE NATURAL MARKET

A committee representing refiners and natural gasoline manufacturers operating plants in the Mid-Continent area is now at work gathering statistics on all phases of the production and marketing of light refinery gasoline and natural gasoline for the purpose of correlating the efforts of the two industries.

Refiners have blamed the natural gasoline industry for holding down the motor fuel market by offering superstabilized natural gasoline as a motor fuel at prices unreasonably below the U. S. Motor refinery price, and the natural gasoline industry has answered with the statement that it was necessary to move the product in this manner and because the refiner has ceased to buy natural gasoline. Practically all refiners have installed vapor recovery systems and many of them are making more of the fraction below pentane than they can use in their own gasoline. For this reason the refiner has contended there is no cause for them to buy more natural gasoline.

On the other hand, the natural gasoline people say they are no longer trying to sell the refiner butane and propane but a well stabilized fraction which the refiner needs to build up the 50 per cent portion of his motor fuel.

Some refiners adjudge this "sales talk" and have ignored these efforts. So the field left to the natural gasoline manufacturer, where production was piling up and he had to take the gas on contract, was to superstabilize and sell his product as motor fuel.

When this practice started several months ago refiners did not view it with alarm because they did not think the volume could be sufficiently large to hazard their market and also believed that the coming of warmer weather would automatically limit the practice. However, as time passed, an increasing volume of this motor fuel was moved and sales were made in direct competition with refinery gasoline. This moved at prices which, when based on the natural gasoline market, were good, but compared to the going refinery gasoline market were low. The warmer weather did not stop the sale of this material because this factor was anticipated by the manufacturers and they reduced the vapor pressure of their product proportionately.

When the practice of selling superstabilized natural gasoline reached the point about two weeks ago where it was moving to jobbers at the rate of about 50 cars a day, at a price delivered about 1 cent below the U. S. Motor refinery gasoline price and of a quality equal to or better than the average refinery motor fuel, it was generally recognized that the problem had come to the point where executive attention was needed.

It was with this thought in mind that executives of a number of Mid-Continent integrated companies agreed to meet to see what might be done to correlate the operations and sales of the refining and natural gasoline divisions of their companies and to suggest a general program which members of the Natural Gasoline Association of America and the Western Petroleum Refiners Association might develop.

Under the present method of operating these divisions as separate units within the same company it is easy to identify wasteful practices. Ruinous competition plays into the hands of tax evaders and cut-price specialists and in turn threatens the whole motor fuel price structure in the Mid-Continent.

The result of this meeting has been the appointment of a second committee acceptable to the two associations whose first duty is to collect data pertaining to production, grading, location of plants, markets, etc., for natural gasoline.

Two questionnaires have been prepared, one to be sent to refiners and the other to natural gasoline manufacturers, asking for pertinent information. The committee has requested that these be returned by June 7, and the answers will serve as a basis for some definite plan of relief.

Tentatively, the committee has formulated a plan which calls for each of the integrated companies operating natural gasoline plants, refineries and filling stations to take all of their own natural gasoline. This will include all grades of natural from the 6 to 8-pound vapor pressure motor fuel to the lightest.

Such a program calls for the closest correlation of efforts among the natural gasoline, refining and marketing departments. Some companies are contemplating blending their natural gasoline production in the field with the crude to run it to the refinery. They will decrease their crude runs in proportion, and the idea is favored at the present at least because natural gasoline prices are below the average crude price or the U. S. Motor refinery price. Also, by eliminating the freight a further earning is shown.

However, there is a practical limitation to place on this practice, consistent with the design of the refinery equipment now in use, but because practically all refineries are now operating below capacity and there is excess fractionating and exchanger capacity in almost every case, the plan finds favor.

The Standard Oil Co. of Indiana is understood to be considering buying natural gasoline to blend with the crude which is transported to its refineries, and on the basis of a 5 per cent blend could take 5,000 bbls. daily from the Mid-Continent in this manner. The Shell and Gulf companies are considering increasing the volume of natural gasoline transported with the crude to their refineries. Other refiners who thave always handled their natural gasoline separate from the crude are also making plans to blend it with the crude in the field to remove it from the spot market.

Some companies favor the plan of stabilizing the natural gasoline in the field and shipping it direct to bulk plants for blending there with refinery gasoline. In these instances the refinery will be bypassed and a program of close co-operation must be worked out between the natural gasoline and marketing departments. These two departments have never been considered as having much in common in the past and calls for an entirely new set-up in those companies considering such a move. The Shell Petroleum Corp. and Skelly Oil Co. are identified as the most active among the Mid-Continent companies contemplating such a program.

The multiplicity of grades of natural gasoline ranging from 6-pound motor fuel to some "outlawed casinghead" has complicated the problem for all of it must be taken care of. At present a rough estimate of the volume of all natural gasoline made in the Mid-Continent area has been placed at 320 cars daily. Of this total, about 150 cars are being manufactured and absorbed by integrated companies within their own organizations. About 60 cars are sold to refiners daily by natural gasoline brokers representing manufacturers who do not have refinery affiliations.

The volume of natural gasoline going direct to jobbers has been increasing very rapidly and at present is said to approximate 65 cars daily. This leaves a balance of about 60 cars which moves to independent stabilizing plants for export, storage and unaccounted for. Of this material approximately half is moving as the 26-70 grade while about 50 cars is moving as the 14-pound grade and about 15 cars as 10-pound motor fuel.

In addition to the closer co-ordination of the transportation and marketing facilities, it is hoped that a program of more completely stabilizing the natural gasoline and refinery gasolines be worked out. Six Mid-Continent manufacturers have indicated they will install additional stabilizing equipment to accomplish this end. The refiners will also install stabilizing equipment at their plants where the product they are now making proves too volatile to come within the recognized limit of volatility below the 20 per cent point, or stated more specifically, where there is an excess of butane or an appreciable volume of propane.

All of these efforts when operating will tend to decrease the volume of motor fuel produced, will improve its quality and there is nothing in the program but what might be justified from a purely economic standpoint.

BUILDING ANOTHER PLANT EAST TEXAS

H. H. Adams of Fort Worth is erecting a 1,250,000-foot casinghead gasoline plant on the J. B. Watson lease in the southwestern part of the Mary Van Winkle Survey, Kilgore area, Gregg County, and will process gas from wells in the vicinity of the plant. The gasoline will be shipped out from loading rack on the I.&G.N. railroad, which runs one-half mile from the plant site.

Another small plant was erected in the Kilgore area by the Trapshooter Reilly Oil Co., but due to the small volume of gas produced from each well, and requiring many connections in order to obtain sufficient gas on which to operate a plant, this plant has been shut down indefinitely.

Gulf Production Co.'s plant east of Overton in Rusk County is another plant which is not operating in the field. It has been completed, but never put in operation.

SUIT AGAINST ENGINEERING CO.

LOS ANGELES, Calif., May 28.—The Standard Engineering Co. which had operated natural gasoline plants in the Newhall and Riverside producing fields heard its securities adjudged worthless by a local municipal court because officers of the company had sold stock in California without a permit. The company was incorporated in Nevada in 1926 and had taken the gas from the Midway Gas Co. The Shell Oil Co. later contracted for the gas and the plants of the Engineering Co. ceased to operate.

CANADIAN BUTANE PLANT

THREE RIVERS, Quebec, May 28.—The first Canadian butane-air plant was placed in operation here this week and had been equipped with the largest butane gas holder in the new industry. The holder is a Hortonsphere 45 feet in diameter and has an operating capacity of 92,400 feet of gas under 30 pounds pressure. This permits adequate capacity for expansion of the use of the gas in the community and offers ample protection against failure of any part of the mixing plant.

SOVIET PLANS TWO BILLION BARREL CRUDE PRODUCTION

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, May 28.—The presence of leading Soviet oil executives in the United States for a conference with other world petroleum leaders on possible plans for stabilization of international oil markets has centered attention on the serious potentialities of the expansion of oil producing, refining and exporting operations of the Soviet. Exports of Russian oil in recent years, coupled with growing production in other parts of the world, have been largely instrumental in demoralizing world markets, but the problem of absorbing Russian surplus output will grow in magnitude if present schedules of the Soviet are adhered to, and the knowledge of this condition was largely responsible for the calling of the present conference.

While domestic consumption of refined products in Russia is steadily growing, the increases in production of crude and refined products have continuously outstripped the gain in domestic requirements, and the Soviet oil trust for some years to come will still be faced with the need for finding additional export markets for its surplus.

Considerable conflict has been shown thus far in reports emanating from Russian and other sources dealing with production, domestic consumption and proven resources in Soviet Russia. A series of reports recently compiled by the Nafta Oil Research Institute, just received in this country, throws considerable light on the subject of the Russian petroleum industry, and incidentally cites statistical data indicating the probability of a successful culmination of the second Soviet five-year plan, just getting under way, which calls for total production of more than 2,000,000,000 bbls. of crude petroleum by 1940.

Prospective Regions

The following interesting official views on the vast productive capacities of Soviet Russia's various proved and prospective oil-producing regions are taken from various recent bulletins issued by the Nafta Oil Research Institute.

The capacity of the petroleum market of Soviet Russia is growing tremendously. In prewar Russia there were only 150 tractors with a total horsepower of 2,190. In the spring of 1928, the first year of the five-year plan, there were 32,310 tractors, but now in 1932 there are 150,000 tractors with a total horsepower of 2,190,000. At the end of the second five-year plan the number of tractors will be 558,000 with 14,000,000 horsepower.

The fuel consumption of tractors in 1931 was 1,200,000 tons of kerosene; 214,000 tons of ligroin and 206,000 tons of lubricating oil. In 1933 requirements for these purposes will be about 4,000,000 tons of ligroin and kerosene and in 1937 about 10,700,000 tons. The kerosene fraction from refining is only 20 per cent. For tractors alone 53,000,000 tons of crude a year will be required. If the fuel needed for other purposes is added we find that the capacity of the oil market of the U.S.S.R. for the six years 1932-1938 will be not less than 253,000,000 tons.

This quantity is distributed among the oil trusts as follows:

	Tons
Azneft	139,500,000
Grosneft	62,071,000
Maineft	25,150,000
Embaneft	9,040,000
Turkmanneft	5,090,000
Sakhalin	4,910,000
Grusneft	2,850,000
Central Soyusneft	2,620,000
Dagestan	950,000

Increase of 20 Per Cent

An average increase of 20 per cent per year is provided for until, in 1940, the estimated U.S.S.R. production must reach 300,000,000 tons of crude, the basis for an output of 550,000,000 tons being created by drilling.

The total resources of petroleum in the known areas are estimated at 1,500,000,000 tons. These resources are divided into five categories:

	Tons	Per cent
In operation, A	105,166,000	11.0
Proved, A-2	206,615,000	13.8
Visible, B		
Proposed, C	274,900,000	18.2
Possible, C-2	1,021,000,000	68.0

The first two categories form 65 per cent of the reserves necessary for the second five-year period. The problem of the second five-year plan is the transfer from the last categories to the first of 90,000,000 tons of petroleum products.

In the Baku district the resources of the first two categories are 148,760,000 tons and these reserves are sufficient for the carrying out of the second five-year plan. In the Grozny district drilling in new areas at an increased rate is proposed. An important place in the proposed U.S.S.R. petroleum area is held by the Maikop oil field and here also drilling in new areas on a large scale is proposed.

The reserves in the Ural-Emba district are estimated at 22,500,000 tons. But the well-known geologist, Professor Gubkin, considers that the reserves are much greater and estimates these at 250,000,000 tons. The reserves in Sakhalin are 42,000,000 tons; in Dagestan, 10,000,000 tons.

Siberian Sources

Soviet geological reports, the Nafta Institute report concludes, have indicated the existence of substantial petroleum reserves in the Elabusch and Vjatka districts, and in various parts of Siberia, and it is expected considerable development work will be carried out in these areas as soon as the nearer and more promising fields have been thoroughly exploited.

Considerable success has recently attended the efforts of engineers of the various Soviet oil trusts in developing production from lower horizons in existing oil fields. Azneft in particular has been active in this work during the past year, with considerable new deep horizon production brought in and indications of heavy deposits at still lower levels which have not yet been tapped by the drill. Electrical methods have been extensively used in charting these areas, and the work is being extended to all of the fields where Azneft is operating. A number of gushers, flowing under heavy pressure, have already been brought in from the deeper horizons. At the close of 1931, Azneft was actively drilling in 20 fields. Considerable success attended its activities in the Bibi-Eibat Field where well No. 132 was brought in late in the year flowing approximately 70,000 bbls. per day from the upper formation, with indications pointing to still more prolific deposits at lower depths.

High Spots in Field News

KANSAS
New wells in Barton-Ellsworth area. Big gasser in Blake district. Oil well in Holyrood. New pipe line planned.

WEST AND NORTH TEXAS
Ward and Loving Counties most active areas. Twelve locations in Ranger district and 25 in Wichita Falls section.

SOUTHWEST TEXAS
Good well in Government Wells district, 3 miles north of production and flowing 90 bbls. an hour. Four new tests.

CALIFORNIA
California production brought down. Price increase for crude and refined now seen as possibility. Gas suit to be heard.

OKLAHOMA
State output below 400,000 bbls. Decline in demand causes further curtailment. Martial law resumed by Governor.

ROCKY MOUNTAIN AREA
Revival of activity in Greasewood, Colorado area. Dry Creek Dome well increases output. New State of Washington test.

GULF COAST
Operators trying to bring in Strake well, Conroe district, Montgomery County. Heep Oil Corp. well filled drill stem in 15 minutes.

EAST TEXAS
Sabine streambed leases will add 300 wells. Total in field now over 5,800, with 159 completions during week and 168 new locations.

NORTH LOUISIANA, ARKANSAS, MISSISSIPPI
Nineteen new locations in Zwolle Field. Most extensive drilling campaign since field was opened. Mississippi and Alabama operations increase.

Late Fields

SOUTHWEST TEXAS

SAN ANTONIO, Tex., May 31.—Suttle and others' No. 1 Bennett, Survey 44, Duval County, 3 miles north extension of Government Wells Field, is increasing flow and gauges at rate of 2,800 bbls. daily, now cut down to one-sixteenth-inch choke and may be necessary to shut in well for storage. Additional storage is being built. Negotiations are under way with concern that will take minimum of 1,000 bbls. for 300 days and build 22-mile pipe line to Texas Mexican Railroad. Many believe if well was turned loose it would make 5,000 bbls. daily.

GULF COAST

HOUSTON, Tex., May 31.—Heep Oil Corp.'s No. 1 Freeman, John Davis Survey, Conroe district, Montgomery County, made a drill stem test of sand at 5,137 feet filling the drill stem to the top in a 15-minute return. The oil tested 33 gravity compared with 36.6 gravity in Strake Oil Corp.'s No. 2 South Texas Development Co., Theodore Slade Survey, which operators are still trying to bring in from a sand at 5,026 feet, as the discovery black oil well of the field. The Heep well is 1½ miles east of the Strake well, which is 2,200 feet south of No. 1 South Texas Development Co., a wet gas well. The second Strake well is being blown with gas from No. 1 in an effort to make it flow.

KANSAS

Morgan & Flynn and others' No. 1 Budde, C NE, Section 16-18-16w, Rush County, Kansas, is estimated at 42,000,000 feet of gas a day from the sand at 3,468-93 feet. The well is the fifth producer in the Otis gas field and is the largest gas well completed in the field to date.

Wolf Creek Oil Co.'s No. 2 Krehbiel, C NE NW, Section 25-19-2w, in the Ritz-Canton Field in McPherson County, was drilling into the chat after finding the top at 2,917 feet. The well is the fifty-third chat producer to be completed in the field.

Umpire L. R. Pickrell announces that on June 8, at the next meeting of the Public Service Commission in Wichita, there will be a discussion concerning the separation of the chat and Viola lime areas of the Ritz-Canton-Decker Field in McPherson County. Some favor dividing these two producing areas into separate pools for proration purposes.

OKLAHOMA

Anderson & Kerr and others' No. 1 Peoples Packing Co., NW cor. SW, Section 3-11-3w, Oklahoma City, flowed 850 bbls. in one hour from the Wilcox sand at 6,412-6,502 feet. The gas was estimated at 12,000,000 feet a day.

Empire Oil & Refining Co.'s No. 4 Fish "B," in Section 19-7-8, in the Fish Pool, Seminole County, was given a potential of 2,571 bbls. a day from the Wapanucka lime at 3,043-3,115 feet. Same company's No. 1 Davis, in Section 30-7-8, was completed for 242 bbls. of oil and 200 bbls. of water a day from the Wapanucka lime at 3,017-54 feet.

Limestone Oil & Gas Co.'s No. 1 in Section 15-7-8, Hughes County, was standing with 1,000 feet of oil in the hole from the pay at 1,238-45 feet. It had been swabbed and made 5 bbls. of oil an hour.

Sunray Oil Corp.'s No. 1 in the SE cor. NE, Section 11-4-8, Pontotoc County, is a wildcat location on a 1,100-acre block.

In the Conservation Pool, in Pontotoc County, Texhoma Oil Co. and others' No. 1 in Section 27-5-6, found a showing of oil in the shallow sand at 1,485-1,500 feet, and a showing of gas at 1,540-42 feet.

The production of the Oklahoma City Field during the last days of the month was as follows: May 28, 76,132 bbls. from 123 wells; May 29, 54,467 bbls. from 126 wells; May 30, 42,626 bbls. from 102 wells; May 31, 59,685 bbls. from 102 wells.

TEXAS ALLOWABLE CUT

AUSTIN, Tex., May 31.—The per well allowable of the East Texas oil field was cut to 54 bbls. daily from 59 bbls., by the Texas Railroad Commission today. The field top output will remain at approximately 325,000 bbls. daily. The new order is effective tomorrow.

The new per well allowable will hold for 15 days. It was based on an estimate that there will be 6,114 producing wells in the field for the June 1-15 period.

EAST TEXAS

DALLAS, Tex., June 1.—Marr Drilling Co.'s No. 1 Tom Lacy, in the J. M. Sparks Survey, southern Rusk County, is shut down at 3,705 feet, showing a large amount of salt water, and will probably be plugged. It was an important semiwildcat which might have extended the field farther to the southwest. It is located approximately 1 mile west of the nearest gas producer, Wemack Oil Co.'s well.

MAGNETIC STORM

Tucson, Ariz., observatory of U. S. Coast and Geodetic Survey reports a severe magnetic storm started at 12 noon (C.S.T.) May 28 and ended at 4 a.m. (C.S.T.) May 31. Their telegram follows:

"Storm began twenty-eighth eighteen. Severe. Ended thirty-first ten."

Importance of Geology In New Conception of Unit Pool Development

Known Production Structures Fall Under One or Another of Four Classes

By Frederic H. Lahee
Chief Geologist, Sun Oil Co., Dallas, Tex.*

GEOLOGY AND THE NEW PROGRAM

This article by Frederic H. Lahee, chief geologist of the Sun Oil Co., on "Geology and the New Conception in Pool Development" presented before the meeting of A.P.I. Production Division in Tulsa this week, is a valuable contribution to the discussion of unit operation outlined in "The New Program" by Earl Oliver as presented in The Oil and Gas Journal last week. Mr. Lahee approaches the subject from the standpoint of geology, dealing with the accumulation and study of geological facts to serve as a basis for efficient pool operation and for equitable participation in oil and gas, as sought in "The New Program." Mr. Oliver contributes another article in this issue, answering a specific argument in opposition.

At the twelfth annual meeting of the American Petroleum Institute, at Chicago, in November, 1931, three addresses of far-reaching importance were delivered on the subject of the "New Conception of Oil Production." I refer to the papers by J. Edgar Pew, John R. Suman and W. P. Z. German. The basic principle in this "new conception" is two-fold: (1) That each owner of minerals beneath the area underlain by a pool of oil and gas is entitled to his share, but to no more than his share, of the oil and gas in the pool in proportion to the quantity of recoverable oil and gas originally in that part of the pool below the surface property under which he owns mineral rights; and (2) that he is entitled to have the pool operated in a practical and efficient manner to yield a maximum ultimate recovery of the oil and gas. The second condition is obviously a corollary of the first since owners of the minerals, who by definition may be termed owners of the pool, cannot all obtain their just shares if the pool is not drilled and managed in the interests of mutual economy and efficiency. If any one operator handles his development program without due regard for the rights of his neighbors, others in the pool will suffer losses. It is clear, also, that the second condition implies proper use of gas as energy before it may be utilized as fuel.

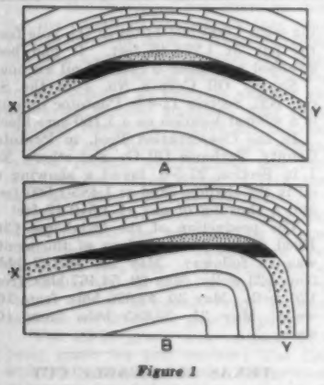


Figure 1

In the present paper I am not going to attempt to set up a picture of how an oil pool might be developed to secure the maximum recovery, fairly distributed to owners of minerals. Many plans have been submitted and several are being tested. What I shall try to do is to outline those subsurface conditions, those geological conditions, of which an understanding is fundamental to any plan of orderly pool development.

Wholly Geological Problem

An oil pool is strictly and wholly a geological phenomenon. It occurs within some kind of porous reservoir rock. It is definitely associated with some type of geological structure, which, in most cases, comprises strata inclined from the horizontal. It exists because, in its relations to this structure, the upward and lateral escape of the petroleum is prevented by impervious rocks which seal the reservoir. Within the reservoir the oil is commonly associated with gas and water. Gas occurs dissolved in the oil and if, under the conditions, there is an excess of gas, it may occur in a free state. These three fluids, water, oil and free gas, are distributed in the reservoir in the order of their specific gravities, the gas above or updip from the oil, and the water below or downdip from the oil. They are under the influence of certain forces of compression, due chiefly to the weight of the column of rock overlying the pool and to hydrostatic pressure within the reservoir rock, operating from some distant region. These several conditions which pertain to the oil pool, namely, the geologic structure and the reservoir rock, the oil, gas and water, and the pressures acting on these fluids within the reservoir may be classified as rock factors, fluid factors, and energy factors, all of which are of primary importance. Together they constitute the geological framework of the oil pool.

*Before A.P.I., Tulsa, June, 1932.

Classes of Structures

In any plan for orderly development it is essential that consideration be given to the kind of geologic structure involved. A majority of the known producing structures fall under one or another of these four classes: (1) Domes and closed anticlines; (2) fault structures; (3) lensing reservoir rocks; and (4) unconformities. In Figure 1 is a dome in cross section. It may be symmetrical like A, or asymmetrical, like B. The arch may be relatively high or low. The main point is that any vertical cross section through the top will show the beds bent in an arch. Assuming that the reservoir rock, XY, is uniformly porous throughout, oil, free gas, and water will be distributed in this type of structure as indicated.

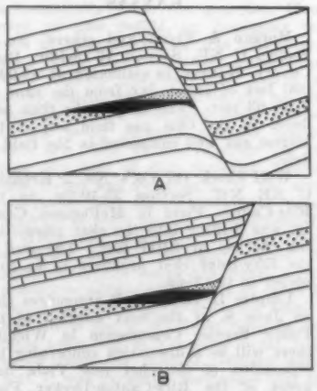


Figure 2

Figure 2 illustrates cross sections of fault structures. Oil, gas and water are represented in their usual relations. In A retention of petroleum is accomplished by downward bedding (drag) and sealing of the reservoir rock at the fault. In B, accumulation of oil and gas depends wholly on sealing of the reservoir bed at the fault, since the structural relations are such as to facilitate escape up the fault plane. Flank accumulations against salt domes are in many cases a special phase of B.

Figure 3 shows three examples of lensing reservoir rocks. In A, the reservoir pinches out updip in a series of tilted beds. In B, pay sands pinch out on an anticline, but some distance below the crest. In C, the reservoir rock passes over the top of an anticline and pinches out downdip, but at a level higher than the water-oil contact on the structure.

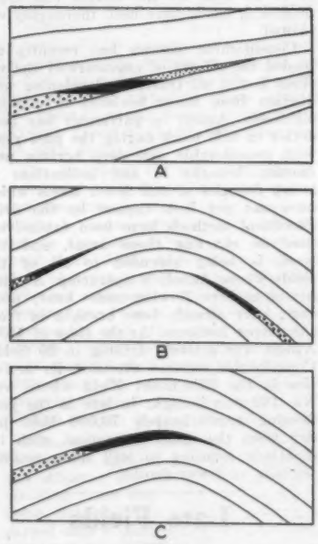


Figure 3

In Figure 4 are several conditions which may be encountered in association with unconformities. Bear in mind that an unconformity is simply an old erosion surface, like our present land surface, covered up and deeply buried by a later series of deposits. In Figure 4 A, a porous reservoir bed is unconformably overlain by an impervious layer in the lower part of the younger rock series. In B, the reservoir rock is in the younger series. Its updip edge is sealed where it abuts against the uneven surface at the top of the older series. In Figure 4 C more complicated relations are shown. Bed X is capped by an impervious layer on each side of the anticline. Bed Y is similarly capped on the right, but on the left it is in contact with porous basement sand in the overlying series, thus permitting escape of oil and gas into this basement sand. For purposes of demonstration we may suppose that closure both above and below the plane of the sketch has allowed accumulation in bed Y on the right[1].

Reservoir Rock

In the four figures outlining geologic structures, we have assumed that the reservoir rock is uniformly porous; but this is almost never true of pay beds in actual experience. In the first place the reservoir may be a true sand, composed of granular particles of quartz and other hard minerals, or it may be a limestone or a dolomite. Rarely it is some other kind of rock. Within a sandstone or a limestone or dolomitic reservoir the pore spaces may differe in size, in distribution within the rock, and in continuity. We need not go into the causes of these differences. The significant facts to bear in mind are that such variations in porosity are common and that they have a very definite bearing (1) on the distribution of oil and gas on a structure and (2) on the permeability of the reservoir rock.

Permeability, in this connection, refers to the ability of the rock to yield the fluids within its pores. There is a most important distinction between porosity and permeability. A fine sand composed of small grains of equal size and a coarse sand composed of large grains of equal size may both have the same porosity, or total pore space, but the permeability of the coarse sand may be many times that of the fine, due to the freer movement of fluids through the larger open spaces. Permeability is sometimes called "effective porosity." The efficiency of the energy available within the reservoir is largely dependent on the permeability of the pay rock.

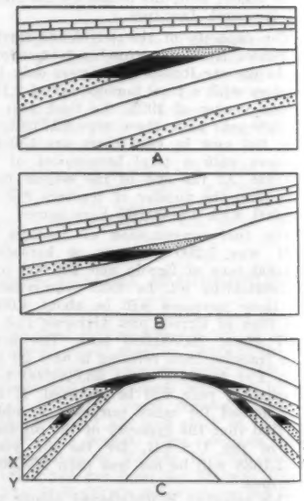


Figure 4

Geology is complex. Most wildcat wells are located on very slim chances—the chance that the geological indications on the surface are reliable; the chance that

[1]In using any of these diagrams one should remember that they represent only one section across the structure. Vertical sections taken in other directions might reveal somewhat different relations.

these indications reflect deep structural conditions; the chance that proper reservoir conditions are present within drillable depths; the chance that oil is contained in such reservoir rocks; and the chance that the well is favorably placed to tap any such oil accumulation. We must not forget that during the last 15 years the more conspicuous and easily recognized surface structures have been discovered. Those not yet reported are either in regions thought to be unfavorable for petroleum or are so faint and difficult of interpretation or of access as to have escaped attention hitherto. Furthermore, we are drilling to greater and greater depths with less and less probability of close coincidence between surface and subsurface structure. These are two factors which have progressively augmented the risk in petroleum exploration. To offset them we have evolved and improved methods of subsurface study, notably through geophysical investigations, core drilling and correlation of strata by characteristics of their mineral grains and their inclosed microscopic animal and plant remains. Micropaleontology, which has to do with these minute organic remains, has become of very great practical importance in the last few years. The trend of geology in its application to the search for oil has ever been toward enhancing the value attached to subsurface research, particularly through the study of the cuttings and cores taken from wells.

Pool in Equilibrium

Before an oil pool is discovered by drilling, there is no movement of fluids within it, nor is there any transfer of energy. The whole system, involving rock factors, fluid factors, and energy factors, is in stable equilibrium. The pool bears a fixed relation to property boundaries on the surface, but, just like the rock factors of deeply buried geologic structure and stratigraphy, this relation cannot in any way be determined prior to drilling. It can be roughly estimated and predicted, but not established.

If a pool were to be developed under the most ideal conditions of single ownership, single management, and efficient technical program, a sufficient number of wells, properly spaced, would be drilled to ascertain the unknown factors pertaining to the form, size, and position of the pool, but none of these wells would be allowed to produce until this information had been acquired and utilized in constructing a rational plan of procedure. Ordinarily, however, ideal scientific development is impossible because of the diversity of ownership of vested rights to the surface and minerals. Quite frequently, as we all know, several or even many wells are completed and placed on production in a newly discovered pool before a scheme of orderly development can be devised and put into effect.

If a petroleum reservoir is tapped by drilling, and if oil, or gas, or water is withdrawn, the original stable equilibrium of the pool is destroyed and the oil and gas and energy within the reservoir begin to suffer change in their relations to one another, to the reservoir, and to the surface property lines. And the disturbance of the original fluid and energy relations will be greater and more uneven in proportion as the drilling and producing are irregularly distributed in point of well spacing and rate of yield. Local close spacing and rapid rate of production may promote early invasion of edge water or of bottom water with consequent losses in oil; or they may cause uneconomic gas-oil ratios or actual wastage of gas, with consequent losses in reservoir energy, which again, in the final analysis, are losses in oil. These facts are too well recognized to require further elaboration here.

Apparent Dilemma

Now we are brought face to face with an apparent dilemma. The new conception calls for an equitable share of oil and gas to each owner of the pool. To learn what this equitable share is we must develop the pool by drilling, but in developing the pool, except in the case of the ideal plan above cited, we inevitably alter the original fluid and energy relations on which equitable participation must be founded. The conclusions to be drawn from this fact and from the necessity, already discussed, for subsurface geological information, are, first, that development of any pool must be conducted as nearly in accordance with the ideal scheme as possible, and second, that from the very beginning of drilling operations every effort must be made to assemble pertinent subsurface data.

Some of these data, relating to such properties as porosity, size of grain, fossil content, and the like, can be obtained at any time from examination of core samples, but the cores must be secured during the drilling. Careful records should be made of top of pay sand elevations and amount of penetration of pay sand. Most important is the measurement and collection of data on gas-oil ratios, fluid levels, and bottom hole pressures. The interpretation of these factors is valuable in efficient pool operation, not only at long intervals of time but from day to day as drilling progresses. Since they are subject to change their observation should be continued regularly and frequently during the life of the field.

Bottom Hole Pressures

The study of bottom hole pressures is rather a new departure in oil production methods. They record conditions at the face of the pay sand, at the bottom of the well, and so eliminate various factors impossible of accurate determination when pressures are measured at the casinghead. Shut in or static bottom hole pressures, are commonly taken when a well has been closed in for 24 hours, and flowing or differential pressures are taken while the well is producing. Static pressures, when compared from well to well, show whether oil withdrawals have been unequal, and perhaps locally excessive, in different parts of the field. Thus, they serve as a guide for properly utilizing reservoir energy and for equalizing and retarding water encroachment.

Flowing bottom hole pressures are an index of the permeability of the pay sand. All previous methods of estimating yield has been based either on decline curves of full capacity daily production, or on porosity or permeability determinations made on small samples taken from the reservoir rock in individual wells. That such samples are representative of the vast extent of the rock outside of the cross section of the hole is purely a guess. But in bottom hole pressures we have a fair measure of the ability of the rock to yield its oil to the well. With a pressure recording instrument, lowered to the bottom of the hole, readings may be made with the well shut in and with it flowing. If the pay sand is tight, yielding its oil slowly, there will be a relatively large drop in the pressure value of the flowing well, but if the sand is open, that is, highly permeable, the drop from the shut in pressure value to the pressure value when the well is permitted to flow will be much less. In functioning as a measure of relative permeability, these pressure records provide means of correlating and analyzing pay formations, estimating potential production of wells, planning for economical spacing of wells, appraising producing properties, and so on. There can be no question that the utilization of bottom hole pressure measurements marks a real step forward in producing technique.

Information of the kind which we have been discussing must be recorded at the proper time, for otherwise it may be lost forever. Too often operators, not appreciating the ultimate value of such information, are loath to incur the relatively slight additional expense involved in its collection. And too often time has been lost in futile arguments where an understanding of this need would have simplified achievement of a program of operation.

Orderly Development

In conclusion, and by way of summary, I would suggest that the theory and practice of orderly development of oil and gas pools include three conceptions. Granting what most of us are no doubt willing to concede, that an oil accumulation is something definitely bounded and with certain properties which affect the whole pool, we must admit that scientific operation of the pool as a single unit will be technically most sound. This first conception has been proclaimed for several years, and although it may not always be possible of attainment, it is a goal toward which we should strive in co-operative management in planning any kind of systematic development.

Second, we have the "new conception" which calls for equitable participation in the oil and gas, and equitable and economic management of operations, for all those who are entitled thereto within the boundaries of the pool, a policy which is a great advance over the methods of legalized piracy which have too long prevailed.

As the third conception, I want to emphasize the importance of clearly recognizing that every pool includes and is surrounded by a complex system of geological conditions, which cannot be known before drilling, but which must be analyzed before equitable participation, according to the "new conception," is possible. The accumulation and study of the geological facts which are to serve as the basis for efficient pool operation and as the basis for equitable participation in oil and gas, must go on with the drilling of the pool. I believe that an intelligent appreciation of this "geological conception," if I may so call it, will be salutary to the cause of orderly pool development.

CALIFORNIA CRUDE OIL PRICES

STANDARD OIL CO OF CALIFORNIA
(Effective June 23, 1931)

UNION OIL CO. OF CALIFORNIA
(Effective June 20, 1931)

For current purchases of crude oil at the well (unless otherwise specified) for allowable crude oil produced in accordance with allocations made by the California Statewide Curtailment Committee.

(All gravities above those quoted take highest price offered in that field)

Gravity	Signal Hill	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Torrance	Richfield	Coyote Hills	Santa Fe Springs	Midway-Sunset, Elk Hills Buena Vista Hills	Lost Hills	Santa Paula	Orcutt	Gravity
14-14.9	$.65	$.65	$.65	$.65	....	$.65	....	$.65	$.65	$.65	....	$.55	$.55	$.65	$.55	14-14.9
15-15.9	.65	.65	.65	.65	....	.65	....	.65	.65	.65	....	.55	.55	.65	.55	15-15.9
16-16.9	.65	.65	.65	.65	....	.65	....	.65	.65	.65	....	.55	.55	.65	.55	16-16.9
17-17.9	.65	.65	.65	.65	....	.65	....	.65	.65	.65	....	.55	.55	.65	.55	17-17.9
18-18.9	.65	.65	.65	.65	....	.65	....	.65	.65	.65	....	.55	.55	.65	.55	18-18.9
19-19.9	.65	.65	.65	.65	$.65	.65	....	.65	.65	.65	....	.55	.55	.65	.55	19-19.9
20-20.9	.65	.65	.65	.66	.65	.66	....	.65	.65	.65	....	.55	.55	.65	.56	20-20.9
21-21.9	.65	.65	.65	.66	.66	.67	....	.65	.66	.65	....	.55	.57	.65	.57	21-21.9
22-22.9	.65	.65	.66	.67	.67	.68	....	.66	.68	.65	....	.56	.59	.65	.59	22-22.9
23-23.9	.67	.67	*.68	.72	.68	.70	....	.67	.70	.66	....	.58	.60	.65	.61	23-23.9
24-24.9	.69	.69	*.70	.74	.69	.72	$.69	.68	.72	.67	$.65	.61	.62	.66	.63	24-24.9
25-25.9	.71	.71	*.72	.76	.70	.74	.71	.70	.74	.69	.65	.64	.64	.68	.65	25-25.9
26-26.9	.73	.73	*.74	....	....	.76	.73	....	....	.71	.65	.66	.66	.70	.67	26-26.9
27-27.9	.75	.75	*.76	....	....	.78	.75	....	....	.73	.68	.68	.67	.72	....	27-27.9
28-28.9	.77	....	....	....	....	.80	.77	....	....	.75	.71	.71	.69	.74	....	28-28.9
29-29.9	.79	....	....	....	....	....	.79	....	....	.77	.73	.74	.71	.76	....	29-29.9
30-30.9	.81	....	....	....	....	....	.81	....	....	.79	.75	.76	.72	.78	....	30-30.9
31-31.9	...	....	....	....	....	....	.83	....	....	....	.78	....	....	....	....	31-31.9
32-32.9	...	....	....	....	....	....	.85	....	....	....	.80	....	....	....	....	32-32.9
33-33.9	...	....	....	....	....	....	.87	....	....	....	.82	....	....	....	....	33-33.9
34-34.9	...	....	....	....	....	....	.89	....	....	....	.85	....	....	....	....	34-34.9
35-35.9	...	....	....	....	....	....	....	....	....	....	.87	....	....	....	....	35-35.9
36-36.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	36-36.9

Santa Paula and Orcutt—Posted only by the Union Oil Co.

Playa Del Rey—Subject to a field gathering charge of 5 cents per barrel.

Huntington Beach—Union Oil Co.'s price schedule reads: 14 degrees up to 22.9 degrees, inclusive, 65 cents per barrel; 23-23.9 degrees, 67 cents, with 2 cents added for each degree upward to 37-37.9 degrees, at 75 cents.

Wheeler Ridge—Standard Oil Co. posts 55 cents for all grades.

Coalinga—Standard Oil Co. and Union Oil Co. post 55 cents for all grades up to and including 24-24.9 gravity, and 57 cents for 25 gravity.

Newhall, McKittrick and Kern River—Standard Oil Co. posts 55 cents per barrel for all grades.

McKittrick, Kern River, Midway-Sunset, Elk Hills and Buena Vista Hills—Union Oil Co. pays 50 cents for 11 to 13.9 degrees, and 55 cents for all other grades.

Montebello—Standard Oil Co. and Union Oil Co. post 65 cents per barrel for all grades.

Whittier and La Habra—Standard Oil Co. posts 65 cents per barrel for all grades.

Elwood Terrace—Standard Oil Co. posts: 33-33.9 degrees, 79 cents; 34-34.9 degrees, 81 cents; 35-35.9 degrees, 84 cents; 36-36.9 degrees, 87 cents. All prices f.o.b. ship.

Santa Fe Springs—Union Oil Co.'s top price is 85 cents per barrel for 34-34.9 gravity.

Coalinga—By the Union Oil Co., effective May 17, 1932: 11 to 13.9 degrees, 50 cents; 14 to 24.9 degrees, 55 cents; 25 to 25.9 degrees, 57 cents.

ASSOCIATED OIL CO PRICES

Associated Oil Co. prices effective June 20, 1931, are as follows:

Ventura Avenue—23 gravity, 55 cents, with 2 cents added for each degree upward to and including 30 gravity, which is 74 cents.

Kettleman Hills—The Associated Oil Co., effective at 7 a.m., February 5, 1932, withdrew and canceled any and all prices heretofore published and in effect for Kettleman Hills oil.

Potrero—24 gravity, 69 cents, with 2 cents added for each degree upward to 34 gravity which is 69 cents.

Coalinga (effective May 24, 1932)—11 to 13.9 gravity, 50 cents; 14 to 24.9 gravity, 55 cents; 25 gravity and above, 57 cents.

General Petroleum Co. in Kettleman Hills, effective January 1, 1932: 33-33.9°, 66 cents; 34-34.9°, 68 cents; 35-35.9°, 70 cents; 36-36.9°, 72 cents; 37-37.9°, 74 cents; 38-38.9°, 76 cents; 39-39.9°, 78 cents.

Ratable Production And Its Effect Upon Ultimate Recovery

Natural Factors and Human Elements Entering Into Development Problem

By E. V. Foran
Consulting Engineer, Fort Worth, Tex.*

The amount of ultimate recovery obtainable from any subsurface petroleum reserve depends largely upon the following natural factors: Its saturation of oil and gas, porosity, permeability, pressure and position of water with respect to the producing horizon. Two of these five natural factors, porosity and permeability, undergo no appreciable change during the life of the pool and are not subject to control, while the other three, saturation, pressure and water status, are subject to change and are controllable within certain limits. All of these natural factors in any common pool bear inseparable relationship to each other.

In addition to these natural factors effecting ultimate recovery, several human elements enter into the situation in accordance with the development and operation of the pools in such a manner as to utilize with varying effectiveness, the natural factors mentioned above. They are: Method of well completions, choice of equipment, spacing, rate of development and the rate and distribution of drainage. The rate and distribution of drainage are the most vital of the human elements involved since they are factors to be dealt with throughout the life of the pool and during which time they control to a marked degree the effect of the natural formation factors on ultimate recovery. Obviously, it is possible to administer to a pool, methods of operations which may apply a rate of production and distribution of drainage which may be very suitable to the natural conditions within the pool or that may be highly unsuitable to these conditions. The methods referred to above may be classified as unrestricted, competitive development and production, or co-operative development and production.

Pools in which development and producing operations are carried on in an equitable and orderly manner are referred to as being operated in accordance with the principles of ratable production.

A brief study of the different major pools of the Mid-Continent area will show at once that the manner in which the details of ratable production is administered to individual pools varies considerably, but the underlying principles of this method of practice are embodied in all of them. A history of Mid-Continent development and practice since 1920 reveals many examples of the application of both orders of operations—restricted development and practice, and, unrestricted development and practice. Examples of the unrestricted development and production practice would include the following pools: Burkburnett, Smackover, Borger and the early development and practice of Seminole, Winkler and East Texas Pools. Examples of restricted, orderly development and ratable production would include such pools as Yates, Van, Sugarland and Raccoon Bend.

Unrestricted Production and Ultimate Recovery

The beneficiaries of unrestricted production in every pool are generally in the minority, and their sole objective is high initial production and profits without regard to what the ultimate results of the pool as a whole may be. The final outcome of any procedure based on this viewpoint will be entirely dependent upon the law of chance, since the important factors, water encroachment, reservoir pressure or energy conservation, and the interrelationship of all other subsurface factors are totally disregarded, and are not subject to successful corrective measures after the development of the pool has progressed beyond a certain stage.

The Hendricks Pool in Winkler County, Texas, is a practical example of unrestricted production in which the corrective factors were applied too late in the life of the pool to fully accomplish the desired results.

The Borger Pool in the Texas Panhandle is another example in which unrestricted development and production was responsible for setting up a situation which developed beyond the point to which it could be corrected by the application of ratable production. However, during the early development of both Winkler and the Borger Pools, ratable production was not universally recognized as a primary essential to high ultimate recovery, and therefore did not receive serious consideration. Moreover, the ownership in these pools was of a nature that immediately set up a highly competitive program of development, which greatly complicated what few efforts were made towards instituting a program of orderly development and production. In the Borger Pool it was common practice to totally disregard the relationship of the gas to the water situation, and following the dissipation of several billion feet of gas in localized areas, the appearance of water in unexpected quantities presented, on short notice, new difficulties to operations for which the operators were not prepared, and with the inevitable result that ultimate recoveries in those areas were much lower than would have been the case had orderly development and diligent co-operative efforts been applied during this stage of development.

The same situation occurred in the Hendricks Pool in Winkler County, but to a somewhat lesser degree. At Hendricks, the pool was placed on a status of restricted production early in May, 1928, following a period of unrestricted production which developed difficulties that were never entirely overcome. Here too, as in the case of Borger, unreasonable waste and depletion of subsurface gas was displaced by water in such quantities that the difficulties encountered could not be corrected, and the resultant loss in ultimate recovery of oil was realized too late for the application of the necessary corrective measures.

Both the Borger and Winkler Pools serve as outstanding examples of the difficulties that may be encountered in the event new pools are discovered in areas of highly divided land ownership, and in which natural gas and water encroachment are primary factors of ultimate recovery.

Upon the discovery of new production, under these conditions, the first result is the setup of a system of competitive development and drainage, unless prompt steps are taken to institute co-operative measures instead. Generally any delay in the decisions regarding these matters, results in immediate complications which may partially defeat the best interests of the great majority of operators and royalty owners of the pool. It is obvious, from the history of competitively developed pools in the past, that equity has no voice or influence in matters of development or drainage. And any system which does not recognize an equitable program, immediately imposes on all operators an unrestricted drilling campaign, or, a loss in ultimate recovery on the leases of those who fail to keep pace with the development, as a result of unratable drainage. Unrestricted development of the pool unfortunately does not characteristics of the pool and still apply the advantages of whatever knowledge may be gained, while the pool is still in its early life. As a whole, little favor; permit the necessary time to study the able can be said for this system of development, since it encourages and permits unethical practice, and the profits of unrestricted production are apparent rather than real, with respect to the pool as a whole, since the surplus recovery in the unrestricted areas is inevitably at the expense of correspondingly greater losses in the remaining partially drilled areas of the pool.

Restricted Production and Ultimate Recovery

In sharp contrast to those pools in which the evils of unrestricted development and production played a prominent part, there are in Texas a number of pools in which consistent restricted development and ratable production has prevailed since discovery of these pools. They are: Yates Pool in West Texas, the Van Pool in East Texas and the Sugarland and Raccoon Bend Pools on the Gulf Coast. These pools may be said to represent in a general way the three major types of production in Texas. The Permian Basin lime production, the Central and East Texas sand production, and one type of the Gulf Coast production.

The Yates Pool was discovered in 1926, and gave promise of prolific production from this area in the West Texas Permian Basin lime. Unusually high reservoir pressures were encountered in this pool at shallow depths, the initial pressure being as high as approximately 740 pounds at 100 to 1,200 feet. Due to the cavernous nature of the lime, the ability of these wells to show a high potential production was outstanding. And, although the temptation to take advantage of this situation was equally as great as that in the case of Borger and Hendricks Pools, nevertheless, good judgment was exercised and the operators in the Yates Pool upon completing sufficient wells to indicate a major pool, immediately instituted the necessary procedure for some form of co-operation, and since they had little precedent to go by, it is natural to expect that some of the first opinions and measures would prove inadequate to meet the complications that were unforeseen. As a result, co-operative measures in the form of restricted production were applied to this pool on October 1, 1927. The method of restricting production was based entirely upon the potential production of the wells, but soon proved inadequate to meet conditions since it still left the various operators with the privilege of unrestricted drilling if they chose to develop high potentials for the various leases. To eliminate this undesirable feature, the plan was revised in July, 1928, and took into consideration the acreage surrounding the producing wells as well as their potential ability to produce oil. This plan gave the advantage of spacing the inside wells on a tract in such a manner as to call for a minimum of development consistent with the highest ultimate recovery of oil. As a result, the wells on the higher part of the structure, which is the most prolific producing area, have been drilled to the extent of one well to 14 acres, whereas, in some of the outlying areas, spacing has been somewhat greater.

Water Encroachment

Due to the high permeability of the producing horizon in the Yates Pool, the factor of water encroachment has received very careful study at the hands of the Yates Engineering Committee. Due to the extremely high permeability of the lime, it is necessary that reservoir pressure be permitted to decline very slowly, and also uniformly, throughout the pool. There is known to exist on the top of the structure a higher ratio of free gas to oil than on the progressively lower portions of the structure, which, if allowed to escape in unreasonable quantities, will be displaced by corresponding encroachment of edge or bottom water. As a recent effort to further conserve the gas in the Yates Pool as an agency for higher ultimate recovery, a great many of these wells have been tubed to reduce the quantity of gas which accompanies each barrel of oil. Although the gas-oil ratios prior to the tubing installations of these wells was not unreasonably high compared to other Permian Basin pools, this feature is in remarkable contrast to the efforts made in the Hendricks Pool under a somewhat similar situation. As a part of the constructive program which has been in force in the Yates Pool during the past five years, the observation of bottom hole pressures has assisted the operators in arriving at the best rates of flow from the pool as a whole since it is recognized that reservoir pressure is generally the most important function of a well's flowing status. Due to the fact that the Yates Pool, to begin with, had no great excess of free gas, it is reasonably sound to believe that continual displacement of the withdrawn oil and gas contents by orderly water encroachment is responsible for the high order of pressure maintenance prevailing in this pool. Therefore, control of the close relationship between water displacement and restricted production taken ratably from all wells of the pool is the only manner in which full advantage of water as an agency of pressure maintenance can be realized. In the event that the same quantity of daily production should be taken unratably from the Yates Pool, no doubt the water would still displace the withdrawn contents at the necessary rate to maintain the same mean reservoir pressure as that observed under ratable takings, but by no means the same uniformity of pressure in the different parts of the pool. When there is appreciable variation in pressure in different parts of the pool, there will likewise be appreciable differences of elevation of the water table within the pool. For this reason ratable taking from the pool is the only course open to the operators if orderly water displacement or encroachment is desired.

Rate of Gas Displacement

From a standpoint of water encroachment, the daily rate of gas displacement should be watched much more closely than the rate of oil production in those cases where large quantities of gas accompany the daily oil production from the pool. Examples of this may be cited in such pools as Borger, Winkler, Hobbs, Reagan County deep pool, Refugio and Oklahoma City. In certain portions of these pools, the gas accompanying the daily oil production, occupied in the reservoir many times the space occupied by the oil. Water, as a displacement agency, functions just the same whether the depleted withdrawn products of the pool be gas or oil. For example, in the Borger area, in 1926, gas-oil ratios from the oil producing strata of 2,000 to 10,000 cubic feet per barrel were common. The reservoir pressure being in the neighborhood of 400 to 435 pounds per square inch, would indicate that each 1,000 cubic feet of gas occupied the same space in the producing horizon as 6 bbls. of oil. At 2,000 cubic feet to 10,000 cubic feet per

*Before A.P.I., Tulsa, June, 1932.

barrel ratios, the space occupied by the gas would vary, therefore, from 12 to 60 times that occupied by the oil. It is at once apparent that gas depletion under these operating conditions is the primary factor to consider in control of water encroachment, since more than 90 per cent of the water displacement under these conditions will result from gas depletion rather than oil depletion. This unusual condition existed in the early life of the Borger Pool, largely as a result of the low initial reservoir pressures. Were the pressure in the Borger Pool the same as that in other pools of equivalent depths, the displacement factor of the gas for the same gas-oil ratios would, of course, be very much lower.

In the Hobbs Pool, New Mexico, where reservoir pressures of 1,400 to 1,500 pounds exist, each 1,000 cubic feet of free gas occupies approximately the same space as about 1.7 bbls. of oil. In the case of extremely high pressure pools, of which the Regan County, Texas, deep pool is an example, 1,000 cubic feet of free gas under pressures of between 3,500 to 4,000 pounds occupies only approximately the same space as .6 bbls. of oil. In each of these three examples cited, the daily displacement of the withdrawn contents by water results primarily from gas displacement rather than from oil displacement, where the gas-oil ratios are abnormally high.

Examples of pools in which the prevailing gas-oil ratios do not play the most prominent part in the rate of water displacement are Yates, Van and East Texas. In these pools the average gas-oil ratios vary from approximately 200 to 500 cubic feet per barrel. A large percentage of this gas is in solution in the oil at the prevailing reservoir pressures and occupies a negligible space, as compared to that occupied by the accompanying oil. However, if in any of these pools gas-oil ratios are abnormally high, then the displacement factor of the gas may approach or even surpass in importance that of the oil. It follows, then, that ratable production as applied in pools whose gas-oil ratios are inherently low that the daily rate of oil production from the pool is the primary factor to consider, and not the gas-oil ratio.

Van Pool as Example

The Van Pool in East Texas is another example of a major pool whose development and producing history is similar in many respects to that of the Yates Pool. The Van Pool has an area of approximately 4,100 acres and produces from the Woodbine formation. There are at present (May, 1932) 308 completed wells in the entire pool. The original reservoir pressures was between 1,200 and 1,300 pounds per square inch. The thickness of the producing horizon reached a maximum of approximately 650 feet at the highest point on the structure, that is to say the water table lies 650 feet below the highest portion of the producing horizon. Of this total section, approximately 50 per cent of it represents actual saturated and producing sand, the remainder being shale breaks and shale laminations. This pool, like Yates Pool, instituted a program of restricted development and production from the very start. One of the first obstacles to this program was the development of a town-lot area, located within the pool in such a position as to threaten the success of any conservation measures. However, through purchase and other co-operative means, this densely drilled area of 25 wells was included in the general program of developing the pool, having, as a primary objective, a high ultimate recovery consistent with minimum development. This, of course, required the application of some form of ratable production, since both water hazard and gas conservation were recognized at the outset of development as controlling factors in accomplishing this objective.

As a result, a plan recognizing both a well's potential and the acreage surrounding it as factors in arriving at the allowable for the entire pool and the distribution of the drainage within the pool was put into operation. After a period of more than two years of operation under this plan, the factor of acreage surrounding a well was modified by taking into consideration the reserves of oil underlying the acreage. When considering the fact that the thickness of the pay section of the acreage at the edge water is only a very small fraction of the thickness of the producing strata in those portions of the pool highest above the water table, it was obvious that some form of correction to the flat acreage allowable was necessary to maintain truly ratable production from this type of pool. In the Van Pool the average gas-oil ratio is approximately 320 cubic feet per barrel (nearly all of this occurs in solution in the oil), and, therefore, the displacement factor of this pool depends almost entirely upon daily rate of production from the pool as a whole, and not so much upon the daily gas output. While gas-oil ratios within the pool vary somewhat, only a very small percentage of the production is accompanied by a high gas-oil ratio.

The system of ratable production, as instituted in the Van Pool, is not entirely applicable, as such, in some of the pools producing from cavernous limes, since it would be considerably more difficult to determine the relative amounts of oil in place under the different acreages in pools of this type. In carrying out the Van Pool method of ratable production, it is not necessary to determine the absolute amounts of oil underlying the various acreages, since a knowledge of the relative amounts of oil under these acreages serves the same purpose. Determinations of reservoir pressures in the Van Pool to date have indicated that a very high order of pressure maintenance prevails, and should continue so long as ratable production is observed in the future in the same manner in which it has been in the past. In relative terms, the increased ultimate recovery from the Van Pool will probably be as high as 50 per cent more than could be expected were the evils of unrestricted production allowed any place in the past three years of development and operation.

The East Texas Pool presents an example of early unrestricted development and production followed by an abrupt change to semirestricted development and a method of ratable production different from that existing in any of the other major pools in Texas or the Mid-Continent. Owing to the great size of the pool and the highly divided ownership, the exercise of any measures of orderly development and production in the early life of the pool met with extreme difficulties and complications.

With the completion of the first 100 wells in the field, it was apparent that all of the gas in the reservoir occurred in solution in the oil. Reservoir shut-in pressures were obtained early in the life of the pool and proved to be more than 1,600 pounds per square inch. During the period of unrestricted production (prior to August 17, 1931), rapid declines in reservoir pressures were observed in the densely drilled areas surrounding the three discovery wells of the south, central and north portions of the field. The resulting waste from the unrestricted production, even though the gas-oil ratios were extremely low (approximately 300 cubic feet per barrel), required that drastic corrective measures be applied as soon as possible. Due to the extreme east portion of the field being somewhat remote from water, and also due in some cases to thinness of the pay section in this area, wells were subject to unreasonably high rates of pressure decline throughout the field and especially on the east side. The undrilled areas suffered an unreasonable decline in reservoir pressure due to having contributed a large portion of the energy necessary to maintain the persistent high rates of flow which continued from the wells in the densely drilled areas. The result of this practice is too well known for further discussion here. The corrective measures required were promptly applied on September 5, 1931, in the form of ratable production based on a uniform daily allowable production per well.

It is true that this present method of ratable production from the East Texas Pool is an immeasurable improvement over the former chaotic conditions existing during the period of unrestricted production, but nevertheless, it is still deficient in some of the important essentials of ratable production recognized in other pools. The rapid changes in development in this field up to the present time has rendered practically impossible any system of ratable taking other than on the per well basis since potentials and acreage allotments called for complex administrative details unknown to other fields. The system of holding the field to a moderate total daily allowable production seems to be sound and reasonable until better methods are workable. The present daily rate of drainage from the pool would probably be conducive to higher recoveries if consideration were given to the recoverable reserves of acreage surrounding the wells in the more sparsely drilled areas or tracts. Observations of the bottom hole pressures in the sparsely drilled areas indicated that, prior to the completion of wells in these areas, an unreasonable decline in reservoir pressures, in many cases more than 200 pounds per square inch, has taken place. This is proof that oil in these areas was drained from considerable distances, whereas, it should be drained from wells completed in those immediate areas.

The greatest deficiency in the application of the present system of drainage lies in the fact that every location in the field must be drilled as soon as possible in order that drainage shall be effected in the most efficient manner. To correct this situation would require, as a first step, that the acreage surrounding the wells in the sparsely drilled areas be considered as lying within these wells' normal drainage areas; and that these wells be allowed to recover the oil from these areas in preference to more distant wells, which certainly can not drain as efficiently as the wells nearby to these areas. While a distribution of drainage proportionate to acreage is not a final solution to the problem of administering ratable production, it is, beyond doubt, a necessary step toward the higher recognized forms of ratable production prevalent and proven in other pools.

Conclusions

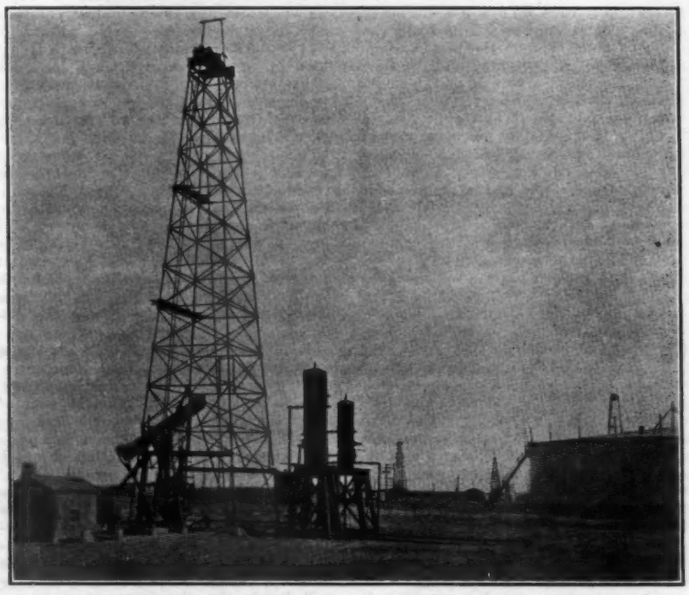
1. Although the details of ratable production are not universally applicable to all pools, the underlying principles of the system can be applied to all wells and leases in a common pool.

2. The primary natural factors of high ultimate recovery from any pool, the maintenance of uniform reservoir pressure through gas conservation and control of water displacement, are inseparably related to restricted and ratable production.

3. The fact that gas-oil ratios are low give no assurance that high daily rates of flow from the pool or unratable production are permissible because the ability of water as a displacement agency to maintain the necessary uniform pressure in the pool is limited.

4. The highest ultimate recovery from any pool can be accomplished only through the earnest co-operation of every operator in the pool in eliminating wasteful practices that accompany unrestricted development and production. Any attempt at enlisting co-operation between operators and at the same time refusing to recognize equitably their interests within the pool is predestined to failure. Equity in an oil pool cannot be protected except through some form of ratable production.

TEXAS WELL HOLDS RECORD FOR CONTROLLED FLOW OUTPUT



The highest authentic record for the gross amount of oil produced under controlled flow by any one well in the United States. The Texaco Star believes to be held by The Texas Company's No. 11 Cowden-Anderson, a well in the West Texas-New Mexico division of the producing department. It is in the Church & Fields Pool, Crane County, Texas, and its total gross production up to April 28, 1932, was 5,992,971 bbls.

This well was completed August 9, 1927, at a depth of 2,840 feet. Its initial production was 8,996 bbls. of oil and 5,000,000 feet of gas. Although No. 11 Cowden-Anderson is capable of producing 3,601 bbls. daily, proration cut its daily production approximately one-fourth of this figure.

Under proration rulings the well produced 541,000 feet of casinghead gas a day with a gasoline content of 1.6 gallons per thousand feet. This casinghead gas was treated for the extraction of gasoline at a nearby plant.

The closest known contender for record production of a single well is one in Wyoming owned by another company. On February 1, 1931, it had produced 5,324,000 bbls., but at that time was producing only 78 bbls. daily. It was completed in 1918.

TAX NOT ENFORCED

CHATHAM, Ontario, May 28.—Though legislation was passed in both Ontario and British Columbia at the recent sessions of the provincial legislatures to provide for a tax of one-half cent a gallon on fuel oil consumed in these provinces, neither government has so far attempted to enforce the tax.

Marketing Returning To Narrow Margins in Sale of Oil Products

Industry Paying Penalty of Over-expansion of Distributing Facilities

By W. T. Holliday
President, Standard Oil Co., Ohio, Cleveland; vice president for marketing, American Petroleum Institute*

The purpose of research, says Mr. Kettering of General Motors, is to answer three questions. Where have we come from? Where are we? And where are we going? In looking for the probable future developments in our industry and seeking to lay our plans in accordance with the probable economic trends, it is not unlikely, to say the least, that an analysis of present facts and the past developments which brought them about should indicate how the unpleasant facts of the present are to be eliminated. It is my personal impression that if we are to come out of the present unsatisfactory situation we must reverse the process by which we arrived here. In fact, economic forces, I believe, will reverse the process, and our effort, both as an industry and as individual enterprises, should be to attempt to go with the economic tide rather than invent quick panaceas.

Throughout the world there seems to be a strange general urge today to attempt to thwart economic law by trying to invent clever cures for symptoms rather than to diagnose and correct fundamental causes. The result of such efforts to lift ourselves by our bootstraps has been on the whole to prolong the agony and make things worse. Perhaps the most astounding effort of this kind has been the recent attempt of the House of Representatives to inflate the dollar by legislative decree. It is difficult to disagree with Dr. Joseph E. Pogue when he said in his address before the American Institute of Mining and Metallurgical Engineers last February: "Indeed, at the risk of oversimplification, it may be said that the world depression had its roots in three causes—credit inflation, trade barriers, and price fixing devices—in respect to all three of which human effort attempted to run counter to basic economic principles."

Interrelation of Operations

Time and again it has been said in the last few months that producers and refiners have got their house in order, why does not the marketing part of the oil industry put its house in order. On numerous occasions we all have heard it said that when the producers curtail crude oil production to current demand and gasoline inventories are brought down to a reasonable figure, the sales departments insist on breaking the entire price structure by selling gasoline below cost. On several occasions leaders in our industry have said that if the larger units in this industry would refuse to sell gasoline at such low figures, the situation would be righted and prices would advance. The question is asked in despair: Why is it that when we get our industry's statistics in good shape at great sacrifice by producers and refiners, prices do not rise?

All of these statements and questions ignore fundamental economic causes and are in tune with the modern idea that economic forces can be circumvented; that the effects of economic causes can be changed without changing the causes themselves.

The marketing end of the business cannot separate itself from the production and refining parts as though it were a separate industry. All three departments constitute one single industry, and economic effects usually are manifested first in the marketing end. Gasoline prices have been the barometer of fundamental economic conditions, and reflect conditions not only in the marketing department but in the refining and producing ends.

It does not lie within the power of the marketing branch of the industry to control prices of finished products. In the absence of monopoly or governmental control or assistance, prices are made by markets and not by individuals, and markets reflect all of the subtle economic forces that are at work. With the aid of state authorities it is possible to set up artificial trade barriers and prices as to crude oil, but the free and open gasoline market will reflect the fundamental conditions.

Gasoline prices have been reflecting the fundamental overproduction: Overproduction of potential supply of crude oil, overproduction of potential refinery capacity, and overproduction of marketing facilities which resulted from overproduction of crude oil and refining capacity.

The production and refining ends of the business have not put their house in order, and cannot do so as long as the present law of oil and gas remains unchanged. The fundamental supply factor is not above-ground storage alone, but the total inventory of all products including the crude oil which lies below the ground and can be brought to the surface by the turning of a valve. Crude oil statistics concern themselves only with above-ground storage and daily production, and there still remains the unknown and probably overestimated factor of potential production. Refinery statistics concern themselves only with present inventories and present daily runs, and do not include the quantity of gasoline which in a few days could be dumped upon the market if our refineries, whose potential daily production is greatly in excess of daily demand, started to run at capacity. There hangs over us constantly the possibility of the breaking of the dam of proration and the immediate conversion of that crude oil into gasoline far in excess of current demands. On account of the liquid nature of crude oil and the character of modern continuous refinery process, the potential supply of crude oil below the earth is part of the gasoline supply, and so long as the fear exists as to the possibility of the dam breaking which holds back that supply, the sensitive tank car gasoline market will continue to be low. Even the supply of crude oil above ground is sufficient to keep prices depressed. We lay so much stress upon the statistics of gasoline inventory, and seem to ignore the fact that crude oil inventory stored above ground, to the extent of its gasoline yield, is practically the equivalent of a gasoline inventory since it can be so quickly converted into gasoline. Even if we ignore potential supply, the inventory of crude oil above ground is approximately six times the total gasoline inventory, so that our real gasoline supply above ground is approximately four times as large as our gasoline inventory statistics would indicate. In a time of scarcity or anticipated scarcity of potential production, or in a time when potential production is reasonably in balance with current demand, the crude oil inventories above ground would constitute a reasonable reserve which would not necessarily enter into the supply factor; but at a time like the present, even if we ignore the potential supply below ground, the actual crude inventories in storage are in essence a part of our gasoline inventory and indicate a supply factor so large as to necessitate low prices in a free and open market. I do not mean to disparage the worthy effort to reduce gasoline inventory but merely am trying to emphasize that it is only one part of the supply factor.

This, in my judgment, is why, no matter what is done in the producing states in the way of maintenance of crude oil prices, the gasoline market continues to be low. Any company which attempts to take the high ground of ignoring markets and basing its gasoline prices upon posted crude oil prices may do so if it pleases, but in doing so it will surrender the market to others; and a market once lost is not easily regained. Gasoline prices have been the barometer of fundamental economic conditions because they are in a market which is open and free; and when crude oil prices have not synchronized with gasoline prices it has been because the crude oil market is by nature more sluggish and subject to control, and has not reflected fundamental conditions. In the last analysis the battleground of this industry is in the marketing end, because the only purpose of producing a raw material is to supply the finished products which the marketing department can sell; and, therefore, the fundamental economic conditions of production must have their logical effect out on the marketing firing line.

Where Have We Come From?

Where did we come from in this marketing end of our industry? Any impartial analysis, I am confident, will disclose that it was the pressure of crude oil which brought us where we are. In 1911 this industry was beginning a rapid growth from a kerosene industry into a gasoline industry. The rapid growth of the automobile industry for many years brought an increase in demand for gasoline even more rapid than the growth in production of automobiles because people drove their cars farther and farther each year. The demand for gasoline put a tremendous strain upon the oil industry to furnish a sufficient supply and to distribute it at the points required. The public was willing to pay a good price to have the job done, and wide margins of profits were the inducement offered to our industry to do the job. New capital attracted by the wide profits rushed into the industry; and the crude oil was found, the refineries built, and the distribution facilities installed. When, however, the job was largely done and new capital no longer was needed, another incentive to refining and marketing expansion came along, in addition to that of the rapid tempo of the economic boom, to wit: The finding of tremendous oil pools with consequent overproduction of crude oil, and the urge upon the owners thereof to find outlets for it. Refineries were built and expanded, not for the purpose of supplying the owners' marketing requirements, but for the purpose of disposing of crude oil. Logically, only such products should be produced as can be sold, but in the oil industry the raw material became the boss, and the sales departments of the industry were told to sell what was produced. When the refineries converted the crude oil into gasoline, it had to be marketed and various methods were adopted to force the gasoline to market which brought about the present overproduction of distribution facilities which we today so much deplore. The outstanding methods which were used to attract new outlets for gasoline were wider and wider margins and the furnishing of capital, such as leased equipment, to dealers.

The quick and easy way for refineries to get new outlets without capital expenditure was to enlist jobbers, new and old, by the bait of cut prices or wider margins; the jobbers in turn added to the further expansion of outlets by attracting into the business more and more retail dealers. Refiners competed with each other on lower and lower tank car prices and wider and wider marginal contracts to jobbers; and the refinery marketers and jobbers competed with each other for retail dealers by lower and lower tank wagon prices with consequent wider and wider margins between service station and tank wagon price. The wider these margins became the more newcomers were attracted into the distributing end of our industry.

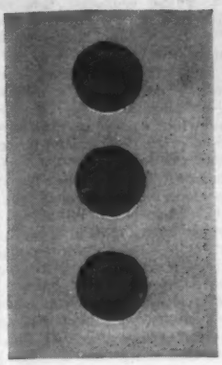
Thus the competition was not merely on prices but on price structure. We have seemed to overlook the fact that the ultimate competition of the industry is on service station prices, and we have attempted contemporaneously to compete on tank car, tank wagon and service station prices. The result, so long as demand was rapidly increasing, was primarily an increase in the number of outlets, but the margins created a vicious circle. As the number of distribution facilities increased and consequently distribution cost increased as a result of diminished gallonage per outlet, there was an ever increasing necessity for wider and wider margins, and as the margins widened price cutting on the part of the recipients of the margins increased, so that the widening of margins had a continually destructive effect upon ultimate retail price.

Gasoline price cutting is an attempt at industrial suicide. By and large, over the years price cutting has not operated to increase consumption materially. The essential effect of gasoline price cutting is to take business away from one competitor and give it to another. Consequently, it is natural and inevitable in our industry that competitors must meet each others prices. Therefore, since open price cuts would be promptly met by competitors, the device grew up of giving secret discounts or rebates on both service station and tank wagon sales. This threw the distributing end of the business into the control of rumor and gossip. Purchasers played one company off against another by claiming that they had been quoted a lower price by a competitor. Salesmen rushed back to the home office with this news and were given authority to meet the price. In many, many cases the rumor proved to be false, and the marketer who thought he was meeting competition was in fact an aggressive price cutter. It was primarily to lift the industry out of this situation and to place competition out in the open that the industry adopted its Code of Marketing Practice. The primary benefit of the code is to enable us to compete on real prices instead of falsely rumored prices. (Unposted commercial discounts, therefore, are contradictory to the essential purpose of the code.)

Where Are We?

Where are we today? We have gross overexpansion of distribution facilities. We have too high a distribution cost because of the low gallonage per pump resulting from this overexpansion. We have the need for wide margins to sustain our expensive distribution setup, but no hope of maintaining such margins in the face of competition tendered by low cost marketers who are entering the field. And yet our present margins still are sufficiently wide to attract into the business not only such new type of marketer, but the conventional type as well. Ex-

*Presented at mid-year meeting, American Petroleum Institute at Tulsa.



EASY DAYS

are passing out . . . . . .

keep your eye on DEEPWELL

For the past year, drilling has largely been in easy structures—holes were made at rapid rates—the load on rotary drilling chain was lightened. But that's not the history of the Oil Country.

It looks as though those easy drilling days were passing out—and when they do—when drilling gets tough—when the big rigs move into the next field—when the rock bits come out—then more than ever again we'll all know that Deepwell—Rex Deepwell Chabelco—is the greatest chain that ever hit the oil fields. It still gives the lowest cost per foot of hole.

Stocked in all active oil fields.

CHAIN BELT COMPANY, 1619 W. Bruce Street, Milwaukee, Wis.

Cable Address: BELTCHAIN

REX Reg. U. S. Pat. Off.

DEEPWELL

CHABELCO

pansion is still going on, while margins inevitably are tending to decline. This, in the face of declining consumption, means only further decline in gallonage per outlet and increased distribution per gallon. And all this at a time when prices are the lowest in the history of the gasoline industry.

Narrowing of Margins

For the past few years margins have been narrowing. Crude oil prices and service station prices have been coming constantly closer together. The gross margin of profit for the industry as a whole is declining as distribution costs tend to increase as a result of multiplication of outlets.

The first narrowing of margins grew out of the recognition of the necessity of basing service station prices upon wholesale gasoline prices, rather than upon posted crude oil prices or refinery cost of gasoline. For a number of years refining companies marketing at retail set their retail prices on a basis of their cost, and during the period of rapid expansion were able to increase their gallonage although they lost in their percentage of the total business. Gasoline produced from low priced crude oil, however, and distress gasoline resulting from overproduction, forced itself upon the market in such quantity at price cuts below these companies' cost, based on posted crude oil prices, until in the last few years it has come to be recognized and practiced that retail prices must be based, not upon current cost, but upon the wholesale tank car or cargo markets. This spread between the wholesale price and the service station price, like all other margins, has been steadily narrowing.

This narrowing of the total marketing margin has been brought about through the coercion of price cutting. As gallonage per outlet tended to decline there was an urge upon the part of dealers and jobbers protected by margins to increase their gallonage through price cutting. The soundness of a margin between tank car and service station price can be readily determined by the trend of price cutting.

Influence on Margins of New Type of Marketers

The most insistent and persistent urge toward narrower margins, however, has come from that new type of marketer commonly referred to as the tank car service station operator or trackage station. This type of marketer buys in tank car lots, usually on the open market, and sells through one or more service stations, usually located upon a railroad siding. In the beginning he usually selected a medium sized town for the site of his activities, but more recently he has been invading the large cities. His whole merchandising policy is based upon selling at 2 or 3 cents below the general service station price. He is able to do this not because of any advantage due to his sidetrack location, because it is just as cheap or cheaper for the conventional type of marketer to truck to service stations from a nearby bulk plant. Neither is his advantage as to the matter of overhead or direct expense so great as has been suggested by some. Those advantages are not sufficient to account for his price reduction. His real advantage is that he does not carry the burden of giving a wide margin to dealers. His low sales cost is due to the large volume which he sells through a given station as a result of his cut in prices. He is simply an opportunist taking advantage of a situation, because if everyone sold at his price no one would get any increased gallonage or lower cost. It strikes me that this type of marketer is the spearhead of economic force coercing a narrowing of margins. The overexpansion of distribution facilities created such excessive marketing cost per gallon that a gross margin of profit was necessitated which attracted this type of marketer into the business. He foreshadows the inevitability of the narrowing of the margin between the tank car and service station price which will be nature's way of eliminating the excess of distribution outlets. Such type of marketer sooner or later must be met by price reductions and consequent narrowing of total margin. If he is not met he multiplies his success, and others like him enter the business. Sooner or later enough price cutting stations will have appeared to force a general price reduction to meet the competition tendered.

I emphasize this part of the discussion because I believe that whatever course of action we may pursue depends largely upon our convictions as to the importance and significance of this new kind of marketing. I realize that there are some people who counsel that such price cutting competition should be ignored upon the theory that the so-called legitimate oil companies can retain sufficient business at higher prices upon the basis of quality and prestige. I believe, however, that any careful analysis of the operations of this new type of marketer and of the effects of his marketing in numerous localities where he has been permitted for some considerable time to operate without being met, will show conclusively that his operations will succeed against the present conventional methods of marketing, and that he by no means presents anything like a mere temporary problem. It is only a short time after he becomes established until he is able to develop merchandising and quality of products and secure public favor and prestige comparable to that of the old-fashioned type of marketer. So long as he sticks to the philosophy under which he started and does not imitate the conventional type of marketer in taking on dealers at wide margins, he is invulnerable against the ordinary present type of marketer and will continue to grow in strength and in prevalence so long as his prices are not met. He has no crude oil to dispose of and no refineries to keep running; he operates his business from the logical point of view, to wit, from the point of view of distribution.

Effect of Third Grade

About a year ago this type of competition was recognized with the so-called third grade of gasoline. The results have not been very effective. He is countering with price cuts on lubricating oil and lubrication, and with improved quality of gasoline. He seems to have no difficulty in procuring non-Ethyl Gasoline of anti-knock quality from numerous refineries, and seems to be disparaging, with success, the quality of the so-called third grade of gasoline. I happen to know of one of these cut price marketers who operates in an area where the third grade gasoline has been sold for about a year. He showed me his figures recently, and since the inception of the third grade his gasoline sales through the same outlet have increased about 25 per cent. In my own personal opinion the only ultimate advantage which will result from the third grade will be the narrowing of the dealer's margin in proper proportion to the narrowing of the total margin.

That, it seems to me, was the real significance of the introduction of the third grade of gasoline, to wit: The narrowing of the dealer's margin thereon. Dealer's margins, except on the third grade, have only narrowed slightly in the last four years; they have not narrowed in proper proportion to the narrowing of the total spread between tank car and service station price; and their narrowing has been entirely insufficient to enable the distributing end of our business adequately to cope with the new type of competition tendered by the trackage station. The trackage station in effect has been passing on to the public the dealer's margin, and the industry generally cannot meet his prices and maintain the present dealer margins without bringing the price realized from dealer business down practically to the level of the tank car price.

Where Are We Going?

Where are we going? It seems inevitable that we must retrace our steps. We arrived here through wide margins, and we must go back to narrower and narrower margins. The narrowing of margins is nature's way of forcing us to become more efficient by getting our distribution cost within this narrow margin. This can only be effected by increasing our gallonage per unit; and that can only happen through diminution of the present number of distribution outlets.

If the economic trend is toward narrowing of margins, then it would seem clear that any marketing practices tending to prolong the existence of present wide margins is an effort to swim against the economic tide and to prolong the agony of evolution. Efforts in the face of changing conditions to retain wide marginal tank car contracts, and efforts to gain dealer business by offering wider margins than are prevalent, are examples of what I have reference to. There seems, however, to be a continual effort of marketers toward freezing the situation by the making of contracts which are not promptly adaptable to changing conditions.

Tank Car Marketing

Back of the problems of tank wagon and service station marketing lie the practices of refineries in tank car marketing. As pointed out heretofore, the urge upon refiners to get gallonage brought about wide marginal tank car contracts. The margins guaranteed in these contracts have narrowed some, but the narrowing has tended to lag behind the actual spread between the tank car spot market and the service station price. Marginal contracts usually are made for a period of a year and are signed up at different times during the year, so that there never is a time when there are not outstanding marginal contracts guaranteeing a margin beyond what the sound margin should be. This makes it extremely difficult to readjust the division of the total margin between dealer, jobber and refiner, and also establish any retail price structure that can be maintained.

If we inevitably are tending toward narrower margins then it stands to reason that tank car contracts made by refiners, guaranteeing a fixed price or a fixed margin for a definite period, throw barriers in the way and create confusion in the process of adjustment. If refiners would go with the economic tide they should abolish marginal contracts as soon as possible. In what other industry does the manufacturer underwrite the jobber so that the latter has no interest in the ultimate retail price? It seems probable, however, that marginal contracts will continue for awhile, and if marginal contracts are written they should be written with an eye to the future and not to the past, and above all should be flexible and adaptable to changing conditions. One of the greatest obstacles to reduction of dealers' margins is the marginal contract to jobbers. Let us suppose, for example, that in a given marketing area the prevailing margin between spot tank car price and service station price has averaged in the past year 5½ cents per gallon and that indications are that it will narrow in the following year to 5 cents. If refiners, merely out of habit or for the sake of easy sales, write contracts on the old 5½-cent marginal basis for the ensuing year, it makes it practically impossible to bring about in the ensuing year any sound readjustment between service station price, dealer price and refinery net-back. That flat marginal contract makes extremely difficult the narrowing of dealers' margins, because if the result of the narrowing of the dealers' margin is to leave to the jobber protected by a wide marginal contract the additional revenue resulting from the reduction in the dealer's margin, he inevitably tends to cut prices on the tank wagon market for the purpose of gaining new dealers. In Ohio this year we have found that the greatest difficulty in narrowing of the dealer's margin has been the jobbers protected by marginal contracts who therefore refuse to follow the decline in the dealer's margin. Also, of course, to the extent that a jobber, protected by a wide marginal contract, markets direct through its own outlets, he has a type of ammunition for cutting retail prices that cannot be met by any reduction in the general retail price, since that simply reduces his cost accordingly.

One of the most demoralizing influences today is the jobber selling a refiner's advertised brand which he purchases under a marginal contract, especially if the margin be based upon the local service station price rather than on the prevailing service station price over a broad area. When a jobber having a well-known brand cuts his price openly or secretly it has the same effect as if it were done by the major company from whom he purchases. Under a marginal contract giving local protection the jobber has every inducement to break down the service station price. If his open and secret price cuts and those of other similar jobbers compel a reduction of the service station price, he has suffered nothing and can continue his tactics because his margin remains the same.

Let us consider now the competition among jobbers and refinery marketers for tank wagon and service station business. The margin between the spot tank car price and the service station price in a given marketing territory tends, let us say, to be about 5½ cents. At least so far as open service station prices are concerned, most marketers will be compelled to sell at the same service station price. What should be the division of this margin between the tank wagon seller and the dealer; in other words, what should be the dealer's margin? If the dealer had a 3-cent margin at a previous time when the total margin was 6 cents, it would seem reasonable that his margin should be reduced when that total margin declines to 5½ cents. Dealers' margins, however, have not been narrowing in proper proportion to the decline in the total margin, and the opposition to the decline comes not so much from the dealers as from the tank wagon sellers who are competing for the dealer business. Intelligent dealers realize that there is no durable advantage to them in a wide margin which attracts so many additional outlets to compete with them for gallonage that their total revenue is not improved. There is, however, the continual tendency on the part of jobbers and refinery marketers, in competing for tank wagon business as in competing for

GULF COAST PORT SHIPMENTS DURING APRIL, 1932

HOUSTON, Tex., May 28.—Oil shipments, including both crude and refined products, from Gulf Coast ports during April, totaled 19,408,601.66 bbls., an increase of 1,938,077.74 bbls. over March. A pick-up in coastwise movements of crude was largely responsible for the large gain although there was a jump in all shipments except export liftings of refined products. Export movement of crude increased 522,549.34 bbls. Shipments by companies and ports follow:

WATER SHIPMENTS APRIL, 1932

Company and Terminal—	Crude— Coastwise (bbls)	Crude— Export (bbls)	Refined— Coastwise (bbls.)	Refined— Export (bbls)	Total (bbls.)
Atlantic Oil Prod. Co., Atreco	1,085,656.27	.....	21,902.61	.....	1,107,560.88
Gulf Ref. Co., Port Arthur	180,131.36	.....	1,452,520.28	152,111.53	1,784,763.07
Humble O. & Ref. Co., Baytown	88,340.00	.....	1,132,041.65	1,353,223.92	2,473,605.57
Humble O. & R. Co., Harbor Isl'd	2,338,161.00	.....	.....	.....	2,338,161.00
Humble Oil & Ref. Co., Ingleside	160,653.00	.....	.....	.....	160,653.00
Humble Oil & R. Co., Texas City	580,583.00	.....	.....	.....	580,583.00
Magnolia Pet. Co., Beaumont	*577,501.75	.....	*2,162,703.00	.....	2,740,204.75
Pure Oil Co., Smiths Bluff	108,762.55	82,325.34	486,201.12	266,041.53	943,330.59
Stan'rd O. Co. (La.), Bat'n Ro'ge	644,322.00	70,056.00	981,512.00	331,348.00	2,027,739.00
Sun Oil Co., Sabine Pass	1,355,643.80	.....	.....	.....	1,355,643.80
The Texas Company, Port Arthur	1,381,913.00	599,523.00	1,644,482.00	269,939.00	3,895,857.00
Total April	8,502,170.63	752,404.34	7,881,362.66	2,272,664.03	19,408,601.66
Total March	6,686,929.91	199,855.00	7,845,445.76	2,736,294.25	17,470,523.92
Difference	1,815,140.72	552,549.34	35,916.90	465,630.22	1,938,077.74

*Includes coastwise and export shipments.

tank car business, to attack the basic structure or relativity of prices and to obstruct the narrowing of margins by competing on the tank car and tank wagon prices. As pointed out heretofore, as an industry we compete not only upon ultimate retail price but upon price structure, and this continually tends to prevent the readjustment of marketing margins.

The inevitable result is to drive all prices lower and lower. If A, for example, seeking to go with the economic trend, insists upon reducing his margin to dealers to 2½ cents below the service station price, but his competitor B insists upon selling at a 3-cent margin, one of the two competitors will always be below the other as to either the tank wagon or the service station price until one of them surrenders or the zero mark is reached. The refusal to recognize a common price structure results in chaos because competitors can never match each others' prices unless they are competing upon the same price structure.

Economic Principle of Price

We ought to recognize as a marketing industry that since the rapid expansion and demand for gasoline has passed, no company can increase its gallonage except by the loss of gallonage of others, and that any attempt to procure that increased gallonage by price cutting on any price in the structure simply tends to pull down the entire price structure. There must be from time to time, changing with conditions, a structure or relativity of prices which is sound. If the margin between tank car and service station price declines from 6 to 4 cents it is manifest that the dealers' margin should decline in proper proportion, and if any company fails to follow a movement toward such a decline in the dealers' margin, it is knocking down all prices in the structure.

There was an interesting article in the Harvard Business Review three or four years ago on the subject of prices, which pointed out that in some industries it is economically natural that there should be a follow-the-leader tendency as to prices, the normal leader being the largest marketer in the competitive territory. The principal characteristic of such industries is that the demand for their product is primarily a derived or secondary demand, created by other industries. The steel industry was given by the author as one example, an industry the demand for whose products is created by the manufacturing and building industries; and the gasoline industry was given as another, an industry the demand for whose product is created by the automobile industry. In such industries, the author pointed out, competitors tend to follow the leader, that is their prices go up and down with the leader's, even though they do not exactly match them. To a considerable extent in recent years of oversupply in the oil industry, I must confess that the company occupying the economic position of leader often has been rather the target to be shot at!

I mention this because I think it ought to be recognized as one of the economic fundamentals of our industry. The largest marketer in a given competitive area should recognize its responsibilities of leadership and should endeavor to adopt price structures and sales policies which are sound and which can be followed by its competitors. The competitors, on the other hand, should recognize the economic principle involved, and if a price structure in a given competitive area is economically sound it should be followed. This is for the reason that if it is not followed a chaotic condition results which breaks down prices all along the line. Competitors must meet each others prices, and if they are to be met all must follow the same price structure. When anyone adopts a different structure or cuts prices he is simply attempting himself to be the leader, and if his efforts have any effect he will be followed in the area in which he operates.

Much ignorant criticism has been leveled at our industry at times because of the fact that marketing competitors match each others prices. This, however, is natural and inevitable, and is something neither subject to just criticism nor to be apologized for. Since price cutting does not materially increase demand, and simply takes gallonage away from someone else, prices must match each other. We would have a much improved condition in the marketing branch of the industry if any company, having a real stake in this industry and yearning for increased gallonage, would recognize that he who seeks to gain that gallonage by price cutting or departure from the prevailing price structure, thereby assumes the function of a leader who will be followed, and that it therefore behooves him to be sure that his leadership is sound.

Summary

In conclusion, it would appear that the economic panorama in the marketing end of our industry unfolds itself somewhat as follows:

1. The combination of an overexpansion of distribution facilities with attendant high selling costs, both supported by wide margins, inevitably attracts new low cost marketers unencumbered by dealers' margins who force reduction of prices and of margins.

2. The inevitable result of the overexpansion of the entire industry is the narrowing of margins, which is nature's way of forcing us to become more efficient.

3. The problem of the marketing end of the industry, therefore, becomes that of adjusting itself in as orderly a way as possible to the inevitable narrowing of margins, with consequent reduction of number of distribution facilities. Whether this adjustment is to be an orderly one or a chaotic rout depends largely upon whether enough marketers recognize the trend and attempt to adjust themselves to it promptly as conditions develop.

4. In order that the industry may have flexibility in adjusting itself promptly to the economic trend of narrowing margins, it must abandon guaranteed or fixed margins, whether they be to jobbers, or to consumers, and keep itself contractually free to readjust prices and price structure at any time.

5. Chaos cannot be avoided if refineries, having developed accepted brands, turn those brands over to jobbers or dealers without accepting the responsibility for the marketing practices of such distributors as fully as though they themselves directly distributed those branded products. Order in the industry depends upon marketers assuming moral responsibility for the practices attendant upon the resale of their branded products.

6. We are returning to the narrow margin and the economic outlet. If we return in the face of bitter competition to procure gallonage by retention of wide margins, there will be a chaotic and unnecessary knocking down of prices. The problem of the marketing end of the industry is to make the return to narrow margins and economic outlets in the form of an orderly retreat instead of a disorganized rout.

OUR PRESENT POSITION AND FUTURE COURSE

(Continued from Page 22)

provisions which relate to refining, drilling and marketing.

But there are phases of waste, to cope with which state compacts are needed. There are types of waste, both physical and economic, or partly physical and partly economic, which result from excessive production, wholly irrespective of whether the producing operation is properly conducted, and they result invariably when there is excessive production.

Now the practical and successful way, in my opinion, is not to legislate against inferior uses, not to prohibit the abandonment of stripper wells, not to forbid the placing of too much oil in storage where it may evaporate or be burned, but to regulate production at the well and thus keep the material in the storage which nature provided for it and thereby prevent once and for all and in a really effective manner the kinds of waste referred to. If one state should prohibit inferior uses, the product would move across the border for use in another state. If one state should prohibit excessive storage, the product would quietly move across the borders and go into storage in other states. And clearly it is beyond the power of any state to prohibit the abandonment of stripper wells. Concert of state action is highly desirable if not essential.

Each state is slow to limit production within its own borders in the absence of a corresponding policy in other states. No matter how apparent it may be that oil reserves are being depleted, and that future generations will be dependent upon outside supplies, the state hesitates to cut off a source of revenue to its citizens and the state, although it may be perfectly plain that the product is not bringing its full or fair value. There is a common market of an interstate and international nature, from which each and every state declines to withdraw, no matter what the price may be. And especially does the state decline when there can be no doubt that other states will go ahead and take all that is surrendered. On the other hand, it is fair to assume that no state, whether for itself or its citizens, would be disposed to disregard decent limits if there were legal machinery whereby all producing states could be brought into common accord.

I think the industry should aggressively support the state compact bill modified in form to cover the essentials and give the idea a true and ringing appeal to the states. To be sure, the states may not avail themselves of the compact privilege. But that would be their fault. The members of the Oil States Advisory Committee are undertaking to speak for the states. We cannot assume that they will be repudiated. The Federal Oil Conservation Board is favorable. I think our duty is plain. If the bill is not reached at this session of Congress it can be brought up at the next session.

Present Rate of Production

Production at this time is too high. It must be reduced or our hopes will be blasted. Producers should not dally. For the United States, 2,000,000 bbls. daily at this time, should be the limit. Why does East Texas insist upon exceeding 325,000 bbls. when the Railroad Commission has found production above that quantity results in waste of reservoir energy? Why does the commission fail to enforce its orders? Why do producers allow the matter to get out of hand? Is it proper to temporize with a thing so vital? Self interest is poorly served when relapse of the industry is invited. A few paltry dollars is nothing in contrast with a national calamity.

California must do something, and do it promptly, or else shoulder the responsibility for what may happen. If production in California is not soon brought under control we may expect at least to lose what we have recently gained through months of effort, and California will be the greatest loser.

Even with California down to 450,000 bbls. and East Texas down to 325,000 bbls. there will be more production than present conditions warrant. Companies that are supposed to be sympathetic with efforts to stabilize the industry are lunging straight ahead in various pools producing all the oil they can, or all they are allowed to produce, seven days a week. They are to be found ranged along boundary lines, with other companies professing the same faith occupying offset positions, each straining every nerve to take out the last drop of oil at prices below the average cost of production. That much of the old order remains. It is susceptible of correction. Is the industry interested?

Producers may say that the trouble is with refiners. Refinery runs are excessive. Some refiners will not heed warnings. They are too selfish, greedy and short sighted. Their acumen is comparable to that of the bull moose in running time. But if manufacture is further reduced less crude will be purchased. Everyone knows what that means. The unvarnished truth is that crude production controls, and this cannot be stated too often or in too many form. Stabilization of crude production is, in my opinion, the one and only thoroughly effective remedy for excesses in refining and marketing. When it is placed and held at the proper level conditions will improve all the way down the line. I should like for the time to come when producers, and not refiners or pipe lines, post the prices.

OBJECTION SUSTAINED IN OUSTER HEARING

AUSTIN, Tex., May 31. — District Judge J. D. Moore has recessed until June 6 his hearing on objections of oil company attorneys to Attorney General Allred's amended original petition in the ouster suit.

Judge Moore sustained objections of the companies to a section of the petition which asserted the purchase by the Standard Oil Co. of stock of the Humble Oil & Refining Co. was part of the conspiracy asserted against all the companies. He reserved his decision on an objection to the section asserting that the Standard Oil Co. (New Jersey) "dominated" the steps toward the companies' buying independent stations and putting the code into effect. Other objections relate to similar references to the three other "parent companies," the Socony-Vacuum Corp, Standard Oil Co. of California, and Shell Union Oil Corp., all expected to follow the same disposition as that of the New Jersey Standard. Numerous other objections are to be submitted on June 6.

THE OIL MAN'S CALENDAR

JUNE

1-3—Tulsa, mid-year divisional meetings, American Petroleum Institute, Mayo Hotel.

6-9 — Detroit, Mich., National Association of Purchasing Agents.

8-11—State College, Pa., American Society of Mechanical Engineers, 5th National Oil and Gas Power meeting.

9—Long Beach, Calif., California Natural Gasoline Association, Pacific Coast Club.

12-17—White Sulphur Springs, W. Va., summer meeting, Society of Automotive Engineers.

20-24—Atlantic City, N. J., American Society for Testing Materials.

JUNE-JULY

Economic and Historical Exhibition (oil industry section), Rouen, France.

JULY-AUGUST

July 16 to August 28—Atlantic City, N. J., third American Fair, Atlantic City Auditorium.

AUGUST

23-26—Spokane, Wash., Pacific Coast Gas Association, Hotel Davenport.

SEPTEMBER

14-16—Atlantic City, N. J., annual meeting, National Petroleum Association.

15-17—Atlantic City, N. J., American Trade Association Executives.

22-23—Chicago, National Association of Motor Bus Operators.

OCTOBER

3-7 — Buffalo, N. Y., National Metal Exposition and National Metal Congress, and American Society for Steel Treating.

10-14—Atlantic City, N. J., annual convention, American Gas Association.

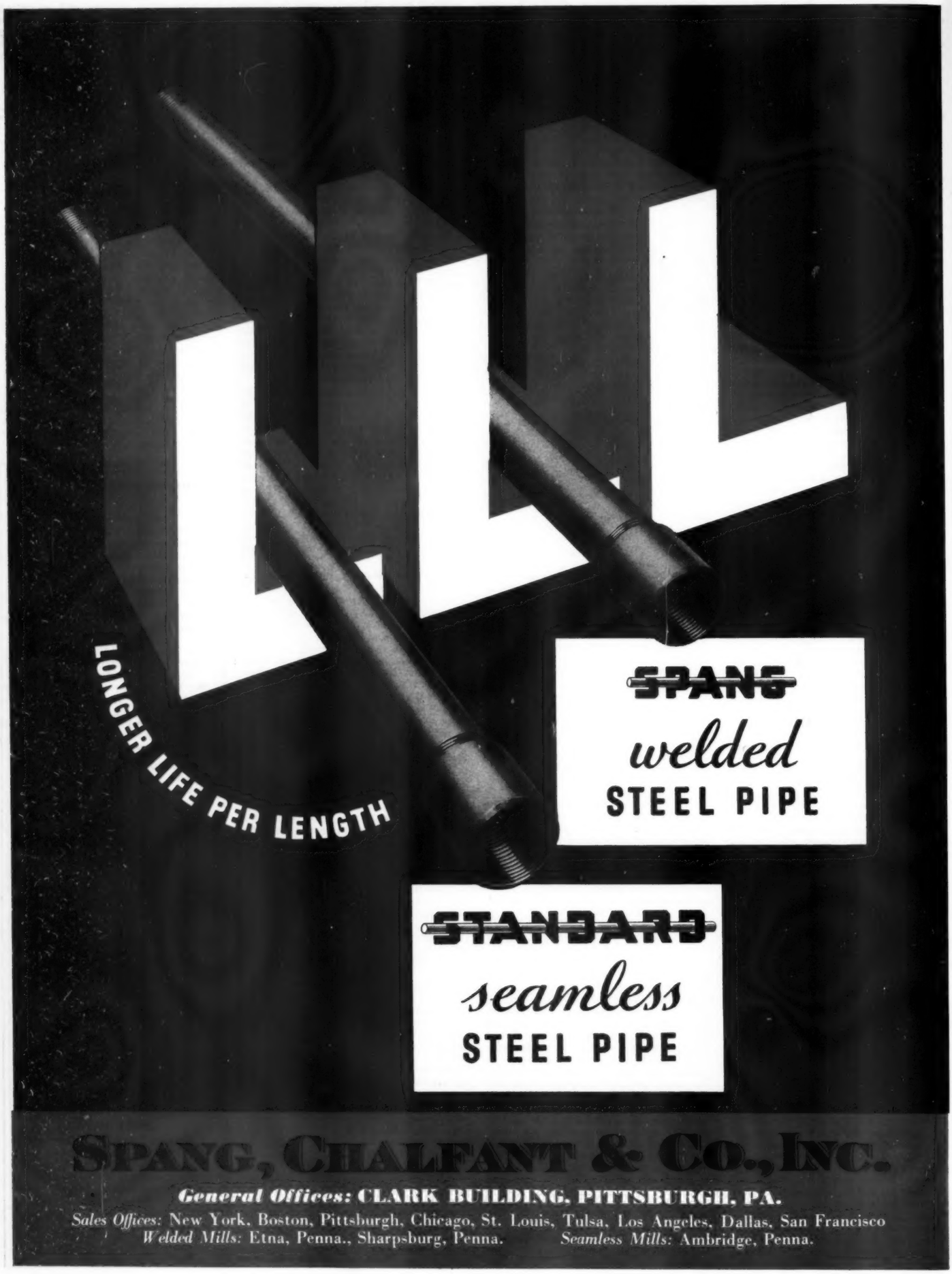
NOVEMBER

10-12—Atlanta, Ga., Southeastern Economic Conference.

15-17—Houston, Tex., thirteenth annual meeting, American Petroleum Institute.

DECEMBER

1—Great Falls, Mont., Rocky Mountain Oil and Gas Association, Rainbow Hotel.


LONGER LIFE PER LENGTH
SPANG
welded
STEEL PIPE
STANDARD
seamless
STEEL PIPE
SPANG, CHALFANT & CO., INC.
General Offices: CLARK BUILDING, PITTSBURGH, PA.
Sales Offices: New York, Boston, Pittsburgh, Chicago, St. Louis, Tulsa, Los Angeles, Dallas, San Francisco
Welded Mills: Etna, Penna., Sharpsburg, Penna. Seamless Mills: Ambridge, Penna.

Ward and Loving Counties Most Active

Locations and Completions Reported Nearly Every Week. Twelve Locations Staked in Ranger District and 25 in Wichita Falls Area

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., May 30.—On May 28, Big Lake Oil Co.'s No. 1 Santa Rita, formerly Texon Oil & Land Co.'s well, the discovery well of the Big Lake Field, Reagan County, pumped 9 bbls. This was nine years after the well blew in, leading the way to further wildcatting in West Texas, and the discovery of 30 other pools in the district.

No. 1 Santa Rita has led to the producing of over 62,500,000 bbls. from 247 wells producing from the regular 2,900-3,100-foot levels, and nine deep producers producing from the Ordovician lime below 8,500 feet. The late Carl Cromwell drilled in the well, and also drilled in the first deep producer in the district, Texon Oil & Land Co.'s No. 1-B University, in the same field which led to the drilling of several other deep tests in the district. There are five wells now drilling in nearby counties in an effort to pick up the deep pay horizon, and one other is soon to start in Crockett County. Cromwell had just spudded a deep test a few miles south of the Big Lake Field when he was killed in an automobile accident in Pennsylvania last December. That test might have turned out to be another deep discovery but it was abandoned by his company after drilling to around 55 feet.

The Continental Oil Co. and Group No. 1 Oil Co. own wells and leases in the field which were formerly carried under the name of Texon Oil & Land Co. The Reagan County Purchasing Co. and the Texas Pipe Line Co. run the production from the field, the latter for the Republic Refining Co. which operates a refinery at Houston.

The field is producing only around 15,000 bbls. per day under Railroad Commission orders, the deep wells producing the majority of the allowable, and only seven of the nine being on production at present. Gravity of the oil runs from 38.2 degrees from the 2,900-3,100-foot pay to as high as 63 degrees for the oil produced from the greater depths. The shallow pay is in the Permian lime.

Ward and Loving Counties

Ward and Loving Counties are the most active areas in West Texas, as they have been for the past year, nearly each week seeing locations staked and wells completed in these two areas which are adjacent to each other, but producing from far different pay horizons, with the exception of the Shipley-Byrd well on the extreme western side of Ward County, which is producing from the Delaware the same pay horizon as found in the Wheat Field, Loving County, 13 miles northwest of it.

Eastland Oil Co.'s No. 1 Weiss, in Section 4, Block 34, H.&T.C. Survey, the best well yet brought in in southern Ward County, has recovered tools which were lost when it encountered the main gas and oil pay, and is deepening from 2,361 feet at which depth it has stood for the past three weeks. It is estimated good for 600 bbls., but is pinched to meet the pipe line allowable for this area, 75 bbls. per day. The Wickett Pipe Line Co. is taking the oil and running it to its refinery at Wickett on the T.&P. Railroad.

Since the completion of this well several others have been started on offset leases, the immediate area being the most active one in the county. Eastland Oil Co. has made two other locations on its small lease in the section.

Glasscock Wildcat

Penn Oil Co. and others' No. 1 F. A. Habenstreit, Section 47, Block 36, T.&P. Survey, wildcat of Glasscock County, encountered a small amount of sulphur water from 3,800-10 feet, and is shut down for orders. It will probably be plugged and abandoned, marking off another area in the county as dry, the second within two weeks. It was a unit test drilled by Penn Oil Co., California Co., Honolulu Oil Co. and Humble Oil & Refining Co.

Pipe line nominations may be again cut in the Howard-Glasscock County pools, the purchasers in this area having cut 5,000 bbls. since April 1, and now planning to cut 3,000 bbls. more from the daily takings. Shell Pipe Line Co. will possibly cut off another 1,500 bbls., Humble Pipe Line Co. and Cosden Oil Co. cutting their purchases also, while Magnolia Petroleum Co. takes only its own production. The Col-Tex Refining Co. of Colorado City takes 4,000 bbls. a day. East Texas oil is no doubt the direct cause of this curtailment, companies electing to take more oil from that district, and cutting down in West Texas and other districts, which are more remote from Gulf ports, and which do not produce the sweet high gravity crude of East Texas. Rapid drilling and the completion of many wells in the latter district each week is also forcing the situation, pipe line and purchasing companies being almost compelled to connect with more wells each week to prevent distress oil from being thrown on the market. This causes other fields in the State, especially fields in West Texas, to be sacrificed by having daily allowables further curtailed from time to time.

Shearer Pool

The Masterson or Shearer Pool, between the Yates Pool and the Pecos Valley Pool, Pecos County, is to get another test, the first in over a year. Arthur Adams of Fort Stockton, and associates are to spud a test by July 1, on the north half of the southeast quarter of Section 101, Block 10, H.&G.N. Survey. The 30-acre tract is owned by the Atlantic Oil Producing Co., which will retain an overriding interest.

Cranfill and Reynolds and Monte Warner opened up this pool in 1929, when they completed their No. 1 Masterson in Section 104, Block 10. Pay is found in this area at from 1,250-70 feet. The discovery was completed at a total depth of 1,495 feet, for 40 bbls. per day, but it soon fell off to about a third of this initial. There are four producers in the area, with no outlet.

Yates Producer

The Gulf Production Co. added another producer to the Yates Field, Pecos County, this week when its No. 34 Yates, an outpost well on the northeastern edge of the field, topped the pay at 1,123 feet, and had the first flow of oil at 1,218 feet, shutting down at 1,258 feet to complete. It made five heads hourly totaling 45 bbls., 7 per cent water, and cement was run to shut off water. It is located 13,415 feet from the west line and 330 feet from the south line of Section 3, Runnells County school lands. A south offset will probably be drilled by the Simms Oil Co. in Section 103, T.C.Ry. Survey. The Gulf well was the first to be drilled in the field in many months.

The case of the Douglas Oil Co. against the State of Texas, which involves the boundaries of the Yates Field, was set for submission July 27 by the third court of civil appeals. Approximately $50,000,000 is tied up in the litigation. Most of the money held in escrow belongs to the public school fund, and the remainder to private individuals.

RANGER AND WICHITA FALLS

There were 12 locations staked in the Ranger district this week and 17 completions reported. Shackelford had seven of the locations, Eastland County two, Callahan two and Brown County one. Callahan County had four completions, Shackelford four, Palo Pinto two, Comanche one, Coleman three and Brown County one.

In the new area in northern Callahan County, opened a couple of weeks ago by Ungren and Frazier on the Jackson ranch, Drew Beams drilled a south offset to the 911-foot discovery well, but missed this pay. It is now drilling ahead in an effort to pick up the 1,300-foot pay from which several wells are producing approximately 1,700 feet to the southeast.

Activities in the Wichita Falls district remain steady with 25 locations staked for new tests this week, several of them for wildcat Canyon series tests which are attracting considerable attention to the district due to this horizon being a newly discovered pay from which several good wells have been completed during the past few months in the Chalk Hill area, Archer County.

The Consolidated Oil Co. will drill a 2,300-foot Canyon test 4 miles southwest of Chalk Hill and will use rotary tools. The Texas Company is to drill four wells on the Waggoner ranch, Wilbarger County, having made four locations. These are a sequence of the contract formerly made between the company and Mr. Waggoner, and are also being drilled to increase the company's production in this district.

The Deep Oil Development Co. is setting tubing in its No. 1 Wilson, Lease 5, in the Chalk Hill Pool, Archer County, and has erected two 500-bbl. tanks to accommodate production from the well. The well filled steadily for five minutes on a test through 6⅝-inch casing from pay topped at 2,238-42 feet, and while standing at a total depth of 2,244 feet. A southwest offset will be started immediately.

Fain & McGaha's No. 1-C fee in the new field in Archer County opened by these operators has ceased to flow and is now on the pump. It made 340 bbls. the first 24 hours on the pump, from oil sand logged at 1,783-87 feet.

In southeastern Archer County the Lamont Drilling Co. has drilled a new well, extending production for 1 mile, or opening a separate pool. It encountered oil sand from 689-701 feet, and is shut down at the latter depth estimated good for 75 bbls. a day. Two locations have been made for offset tests.

The Consolidated Oil Co. has completed its No. 1-A Portwood in southeastern Baylor County for an initial production of 212 bbls. from oil sand logged at 1,369-1,410 feet. It is the first well drilled in this area for many months.

PANHANDLE DISTRICT

The Panhandle gas price situation has finally reached a climax by E. B. Johnson & Sons estate filing suit against the Texoma Natural Gas Co. for a higher price for gas taken from its lands, asking that royalty owners be paid on a basis of 10 cents a thousand feet, compared with the first offer of 2 cents per 1,000 feet. The suit also involves natural gasoline which is extracted from the natural gas produced on the lands, asking that the royalty owners share in this commodity also. The suit is supported by the Panhandle Gas Royalty Owners Association, which has been trying for several months to obtain higher royalties from the gas produced in the district. The suit was filed in the Eighty-fourth District Court at Stinnett in Hutchinson County, one of the larger gas producing counties of the Panhandle.

The Magnolia Petroleum Co. has completed its No. 1 Arthur Neild in the SE cor. N half, Section 361, Block 44, H.& T.C. Survey, Moore County, for a 4,000,000-foot gasser after plugging back from 3,646 feet where it had salt water, to 3,467 feet. It was shot with 40 quarts from 3,416-34 feet in lime but with no results. This is a semiwildcat producer in this area.

COMPLETIONS IN WEST TEXAS

Andrews County

Fuhrman Petroleum Co.'s No. 1 Bonner, top salt 1,800 feet, show of gas 3,005 feet, show oil 4,254 feet, shot 390 quarts 4,200-4,430 feet, initial production 10 bbls. per hour estimated through 2-inch tubing, total depth 4,541 feet.

Crane County

Gulf Production Co.'s No. 98 McElroy, top salt 1,085 feet, top pay 2,725 feet, shot 270 quarts 2,727-2,941 feet, initial production 210 bbls. per hour, total depth 2,946 feet.

Pecos County

Black and others' No. 1 Pecos Valley, dry and abandoned, total depth 1,720 feet. Cardinal Oil Co.'s No. 2-G Tippett, dry and abandoned, total depth 415 feet. Culbertson Brothers' No. 7-B Monroe, top pay 469 feet, initial production 90 bbls., total depth 519 feet.

Taylor County

Eastland Oil Co.'s No. 1 King, dry and abandoned, total depth 2,513 feet.

WILDCAT OPERATIONS IN WEST TEXAS

Week Ending May 30

BORDEN COUNTY

Company, well, farm name, section and block—	Remarks—
Westyde Investment Co.'s No. 1 Looney, 990 ft. from S and E, Sec. 15, Blk. 31, Twp. 4n. T.&P. Sur.	Material on ground.

BREWSTER COUNTY

Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur.	S.D. 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 3, G.C.&S.F. Sur.	S.D. 1,302 ft.
Link-Joiner's No. 1 McIntire, 852 ft. from S and 2,390 ft. from E, Sec. 31, Blk. 352, W. J. Mitchell Sur.	Material on ground.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 930 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur.	S.D. 2,900 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles south Alpine	S.D. 1,750 ft.

CONCHO COUNTY

Beesley et al's No. 1 Waring Estate, 400 ft. from N and E, Sec. 163, T.&N.O. Sur.	S.D. 1,700 ft.; set 8-in. csg.

CRANE COUNTY

Continental Oil Co.'s No. 1-D Cowden, 200 ft. from S and 2,492 ft. from E Sec. 18, Blk. X	Csg. cmtd. at 2,109 ft.

CROCKETT COUNTY

Doleman & Moore's No. 1 Ferner, 2,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur.	Spudded and S.D.
Stanolind Oil & Gas Co.'s No. 1 Massie, 660 ft. from S and 1,980 ft. from E, Sec. 47, Blk. UV, G.C.&S.F. Sur.	Drlg. 935 ft.
The Texas Company's No. 1 B. B. Ingham, 330 ft. from S and 2,330 ft. from E line, Sec. 36½, I.&G.N. Sur.	Location.

COKE COUNTY

Mid-Kansas Oil & Gas Co.'s No. 1 Hearn, 980 ft. from S and W, Sec. 271, Blk. 1-A, H.&T.C. Sur.	Drlg. 1,530 ft.

DAWSON COUNTY

Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, E.L.&R.R Sur.	To resume drilling.

(Continued on Page 56)

Agitating Conroe, Texas, Well With Gas

Intense Activity in Leases and Deals for Drilling Being Shown in Montgomery County as Result of Well's Showing

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., May 30.—Strake Oil Corp.'s No. 2 South Texas Development Co., Theodore Slade Survey, southeast of Conroe, Montgomery County, had not been completed this afternoon. A joint of 5⅞-inch screen was set Sunday in the sand at a total depth of 5,026 feet with 2½-inch tubing run to the top, but the well failed to flow after being washed. Today connections were being made to blow the well with gas from No. 1 South Texas Development Co., a gas producer. Operators are of the opinion that the screen is clogged with heavy mud and that agitation with gas will cause the well to produce. A good well has been anticipated, the first "black" oil producer for the Conroe district. In a drill stem test May 8 oil filled the drill stem in a 15-minute return, gauging 200 pounds pressure with a three-eighths inch choke on the bottom and a one-quarter inch choke on top.

In this well particular care was taken to blank off the top of the sand and the heavy gas pressure which was encountered in the discovery well, No. 1 South Texas Development Co., completed last December. The latter is primarily a gas well, the fluid production consisting of approximately 100 bbls. daily of high gravity distillate which is nearly water white as it comes from the well. It generally is believed that if this well, which was completed at a total depth of 4,991 feet, had gone a little deeper into the sand and had cased off more of the top, it also might have made an oil well. Pressure of the first well, which originally was about 1,500 pounds, has increased steadily and now is 2,300 pounds.

Gravity of the oil in the new well is 36.6 degrees as compared with the 56 gravity distillate produced in the discovery well. The oil is dark green in color and is sweet of very desirable quality. Only two 1,000-bbl. tanks set up by Humble Oil & Refining Co. are on the location but an additional 3,700 bbls. of storage is available at the location of the first well. It is probable that Humble Pipe Line Co. will lay a line from the well as that company's engineers already have been in the area looking over possible routes. If a line is laid soon it is likely that it will be to Satsuma, a pump station on the company's trunk system to the coast, which is 28 miles distant. Another main trunk system, that of Magnolia Pipe Line Co., is only a few thousand feet from the present Conroe Field.

Two Wells Compared

Location of the second well is 2,200 feet south, 4 degrees east of the discovery well and down strike. Due to irregularities and lensing of sands and shales, it is difficult to correlate the two wells. With the top of the Nockleyensis as a marker, the second well is 12 feet lower than the first, which is a natural expectancy. The top of the Hockley in the second well has been logged at minus 3,856 feet, although due to possible discrepancies as to identification of the top of the Hockley there might have been a variance of a few feet one way or the other in this correlation. Surface elevation of the second well is 192 feet as compared with 199 feet in the first.

The No. 2 South Texas Development Co. is the first well drilled under an exploratory development program to be carried on jointly by Strake Oil Corp. and the Humble Oil & Refining Co. on a 4,368-acre block involved in a recent trade between the two companies. Under provisions for the development, Humble Oil & Refining Co. has 30 days from the completion of the Strake well in which to start a test although it is understood that a location will be made at once and work started. Strake Oil Corp. also has another test to drill before Humble Oil & Refining Co. takes over full operation of the block. The discovery well, No. 1 South Texas Development Co., was drilled by G. W. Strake and associates before Humble Oil & Refining Co. made its deal for the block and is not included in the present program. Although Strake Oil Corp. is not obligated to drill its other well until after a well is drilled by Humble Oil & Refining Co., it is likely that that test will be put down immediately to complete the Strake Oil Corp.'s end of the contract as soon as possible.

Area Is Active

Ever since the drill stem test made in the Strake well May 8 and which forecast the completion of a good oil well, trading in the area has been "hot," and the town of Conroe has been overflowing with lease and royalty buyers and operators. However, in the immediate Conroe district there are few open tracts as there has been a steady buying up of acreage since the discovery well came in last December. The possibility of a field of considerable extent being developed has boosted the price of acreage available to boom levels and "big" money is changing hands, although the majority of deals provide for drilling obligations and large payments out of oil. Actual trades reported the past week for small tracts considered close in ranged as high as $1,000 an acre ($400 cash and $600 out of oil).

Judging from drilling obligations reported, an intense development program is anticipated for the Conroe district this summer. Although the Strake-Humble block consists of nearly 4,400 acres under almost solid ownership and Strake Oil Corp. holds more than 3,500 acres additional in a block adjoining the former, leasing has been directed for a considerable distance around the above holdings and the country is pretty well cut up.

Three wells have been completed so far in the area, these being the two Strake wells and an additional gas well, Heep Oil Corp.'s No. 1 Cartwright, John Davis Survey. The Heep property adjoins the Humble-Strake block on the east, but the well, a wet gasser, is located about 1½ miles to the east from the Strake wells. Three additional tests actually are drilling, one of which has reached the horizon, although so far it has proved somewhat of a disappointment. This one is Heep Oil Corp.'s No. 1 Freeman, east and south of the same company's Cartwright gasser and in the same survey. Late in the week it was coring below 5,110 feet in shale. Two drill stem tests were made the past week between 5,030 and 5,050 feet (estimated depths) but they were negative. That test has failed to encounter the showings and sands had in the other wells. This company's No. 1 Roberts, William Harrison Survey, located 1½ miles to the north, at latest report, was drilling gumbo below 3,240 feet. Smith & McDaniel's No. 1 Sealey, Jonathan Pitts Survey, northeast of the district, is drilling around 2,000 feet. Just south of the town of Conroe and 3 miles west of the Strake wells, Rowe & Flowers have derrick up for No. 1 Varner, northeast corner of the 33-acre tract in the R. House Survey. Several miles southeast of the Strake block, in what is known as the Outlaw district, Kraft & Giesieke have completed derrick for No. 1 South Texas Development Co., T.&N.O. Survey No. 9.

The Moran Corp. of Houston has made a deal with the Strake Oil Corp. for the gas production of the discovery well and will provide fuel for drilling wells in the district. That company also has acquired from G. W. Strake, president of the Strake Oil Corp., the gas franchise for the town of Conroe and will start at once to lay a gas distribution system there. Work already is under way for laying 3½ miles of 4½-inch pipe from the well to the town.

Salt Dome District

In the Salt Dome district, United North & South Development Co.'s No. 1 Stoddard, a rank wildcat in the J. C. Keller Survey, near the townsite of Buckeye, Matagorda County, created some interest when it swabbed some oil and flowed several small heads from a sand at a total depth of 7,831 feet. At present a bailer is lost in the hole and a fishing job is under way. This test not only is a rank wildcat but, if completed as a well, will be the deepest producer on the Gulf Coast, the present record being held by Yount Lee Oil Co. in three 7,400-foot wells which have been completed southeast of Jennings. While this test may not make a commercial producer it indicates the existence of oil in that district. The well has experienced many setbacks including eight unsuccessful attempts to make a drill stem test and during which two different strings of pipe collapsed.

Two additional good wells have been completed at Barbers Hill, Chambers County. These are Sinclair Oil & Gas Co.'s No. 12 Wilburn, east side of the dome, and Sun Oil Co.'s No. 7 Chambers County, south side. The latter, deepened from a shallower sand at 4,583 feet, at which it was completed a year ago, to a sand at 5,233 feet, set 113 feet of screen and came in flowing 1,000 bbls. of pipe line oil, 190 pounds pressure. The Sinclair well is in the new activity under way in the comparative shallow horizons underlying the salt overhang in that area.

(Continued on Page 54)

GULF COAST FIELDS AND WILDCATS

Week Ending May 28

RACCOON BEND—AUSTIN COUNTY

Company, farm and location—	Remarks:
Humble O. & R. Co.'s No. 2 McCasland, Wm. C. White Sur., 600 ft. southeasterly along SW line from NW cor. thence 200 ft. northeasterly at right angles	Drlg. shale 1,224 ft.

BARBERS HILL—CHAMBERS COUNTY

R. E. Ferrell's No. 2 Wilburn, Henry Griffith League, 215 ft. W of No. 1 in center of 45-acre tract	Drlg. lime 2,527 ft.
Humble Oil & Ref. Co.'s No. 1 Kirby, Henry Griffith League, 520 ft. N along E line from SE cor. of tract, thence 75 ft. W at right angles, thence 75 ft. N at right angles	Location.
McAlbert Oil Co.'s No. 3-B Higgins, Wm. Hodges Sur., 265 ft. from N line and 50 ft. from W line of tract	Set 57 ft. 7 in. of 5-in. screen 5,055 ft; tested S.W.
Mills Bennett Prod. Co.'s No. 4-A E. W. Barber, Henry Griffith League, 300 ft. W of No. 3-A, 50 ft. N of S line	Rock 1,171 ft; cmtd. 13⅜-in. csg.
Mills Bennett Prod. Co.'s No. 3 Kirby, Henry Griffith League, 645 ft. E, 40 ft. S, NW cor. of tract	Drlg. shale and lime 831 ft.
Mills Bennett Prod. Co.'s No. 4 Means, Henry Griffith League, 150 ft. W of No. 3	Calcite 930 ft; cmtd. 13⅜-in. csg.
Rio Bravo Oil Co.'s No. 2 Fisher, Wm. Bloodgood Sur., 300 ft. E and 33 ft. S of NW cor. of tract	T.D. 4,166 ft. in cavity; reaming to bottom.
Sinclair Oil & Gas Co.'s No. 12 Wilburn, Wm. Hodges Sur., 150 ft. W of No. 10 and 50 ft. N of S line	Set 32 ft. 11 in. of 5-in. (O.D.) screen 4,312 ft; comp. flowing 1,500 bbls. P.L. oil, 270 lbs. pressure, ½-in. choke.
Sun Oil Co.'s No. 3 Higgins, Wm. Hodges Sur., 50 ft. from E line of tr. and direct offset McAlbert Oil Co.'s No. 2-B Higgins	Rig.
Sun Oil Co.'s No. 7 Chambers (W.G.), Wm. Bloodgood Sur.	Set 113 ft. screen 5,233 ft; comp. flowing 1,000 bbls. P.L. oil, 190 lbs. pressure.
Sun Oil Co.'s No. 14 J. Wilburn, Henry Hodges Sur., 150 ft. W of No. 12 and 50 ft. from N line	Drlg. sandy shale 3,233 ft.
The Texas Company's No. 6 Wilburn (D.D.), Henry Griffith League	Cmtd. hole 5,129 ft.
Texas Gulf Producing Co.'s No. 7-A Barber, Henry Griffith League, 712 ft. from W line and 225 ft. from N line of tract	Set 5 joints 7-in. screen 5,861 ft; washing.
Texas Gulf Prod. Co.'s No. 3 Ilfrey, Henry Griffith League, 260 ft. W of No. 2 in center of tract	Drlg. salt 1,628 ft; top of salt 1,416 ft.
Texas Gulf Prod. Co.'s No. 10-B Kirby, Henry Griffith League, 450 ft. E of No. 9-B and 250 ft. S of N line	Drlg. salt 1,827 ft; top of salt 1,827 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 15 Mayes, E. Wallis Sur., 450 ft. NE of No. 11 and 450 ft. NW of No. 14	Coring sandy shale 2,775 ft.

BLUE RIDGE—FORT BEND COUNTY

Coronado Oil Co.'s No. 3 Blakely, 200 ft. E of No. 2 in Lot 9, Blk. D, E. Drew Sur.	Set 2 joints 4½-in. screen 4,705 ft; comp. flowing 1,000 bbls. P. L. oil, ½-in. choke.

RABBS RIDGE—FORT BEND COUNTY

Gulf Prod. Co. and Humble Oil & Ref. Co.'s No. 3 Booth-Meyers, John Rabb Sur., 1,500 ft. E of No. 3	Derrick.
Gulf Prod. Co. and Humble O. & R. Co.'s No. 1-B Booth, Samuel Kennedy Sur., 445 ft. N of S line due N of No. 1 T. R. Booth	Drlg. hard sandy lime 3,534 ft.
Humble O. & R. Co. and Gulf Prod. Co.'s No. 2 Davis, Robt. Peebles Sur., 2,483 ft. E. 150 ft. S of NW cor. of 1,000-ac. tr.	Rig.
Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 3 Lockwood, John Rabb Sur., 1,000 ft. due E of No. 2	Drlg. shale 5,038 ft.
Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 2-B Lockwood & Sharp, John Rabb Sur., 816 ft. W of No. 1-B	Set screen 5,258 ft; comp. flowing 1,100 bbls. P.L. oil.
Humble O. & R. Co. and Gulf Prod. Co.'s No. 5-A Lockwood & Sharp, J. Rabb Sur., 1,000 ft. W, 300 ft. N of SE cor. of Tr. 2 (469.3 ac.)	Location.

(Continued on Page 70)

AS
DEPENDABLE
AS
TIME
PETRECO
REG. U.S.
PAT. OFF.
PETROLEUM RECTIFYING COMPANY OF CALIFORNIA, Los Angeles Branch: Houston, Texas

River Beds Add 300 East Texas Wells

Completions Nearing 6,000, With 159 Added During Week and 168 New Locations. Unexpected Water in Joiner Area

By L. E. Bredberg

DALLAS, Tex., May 30. — As a result of the Rhodes Drilling Co. of Fort Worth acquiring leases on eight river bed tracts of the Sabine River, in the producing area of Gregg County, at least 300 more wells will be drilled than have possibly been calculated by those who have estimated the ultimate number of completed wells in the district when the field is eventually drilled. The company itself does not plan to drill around 115 wells as has been reported, but will drill only a couple of the tracts itself and sublease the other tracts to various operators, but with 115 wells drilled on the eight tracts they will call for a corresponding number of offsets on both sides of the river, on offset leases.

Three-eighths royalty, plus $5,125 per well will be paid to the State, out of one-sixteenth of the oil produced. This was the highest of the many bids which were turned in to the State when it opened the eight tracts for lease bids. An annual rental of $4 per acre will also be paid to the State, all of the proceeds from the tracts to bring an estimated $3,285,725 to the coffers of the State. W. F. Knode, petroleum engineer of the Railroad Commission, has made this estimate.

The Rhodes Drilling Co. has its offices in the Trinity Life Building, Fort Worth. C. E. Gillham is president, M. S. Rhodes and Frank Cornelius are vice presidents and George K. Taggart is secretary-treasurer. Officials of the company are now working on plans for drilling their leases and subletting those leases which are under consideration for subleasing and drilling.

Award of the eight-tract lease to the company, however, is subject to final action of the Texas Supreme Court in the case of F. B. Jackson against J. H. Walker, state land commissioner. This court recently denied Jackson a lease on the river bed to prospect for oil and gas. He claimed he had filed on the land under the old law and has asked the supreme court for a rehearing on its decision. If the court sustains its former judgment the lease will be made under a law passed at a special session of the state legislature last fall. The land is the property of the public schools of the State.

Now 5,800 Completions

There are now over 5,800 completed wells in East Texas; another nine days probably will bring a total of 6,000 for the field, the greatest and fastest drilling record ever achieved for any field within such a short time.

One hundred and sixty-eight more locations were staked in the field during the week, with three locations staked in wildcat areas in Red River, Rusk and Upshur Counties, a slight decrease from last week's list of 183. Completions also fell off slightly from 174 to 159. Eighty-four of the locations were staked in Gregg County and 80 of the completions were located in that county, which is bearing the brunt of the wildfire activity in the field. Southern Rusk is increasing in activity.

Production continues at around 15,000 bbls. per day more than the maximum allowable of 325,000 bbls. set by the Railroad Commission, and a new curtailment order is expected to be issued cutting the per well allowable several barrels. The new order is expected to carry a per well allowable of 55 or 56 barrels, and will cover the period from June 1 to 16, a new order being issued every two weeks to correspond with the ever increasing number of completed wells and daily production.

There is an increasing number of unconnected wells which will not secure connections until the Railroad Commission's new order is issued, the East Texas pipe line committee intending to meet June 2 to discuss and plan connecting the new wells. Absorbing unconnected wells is an important matter in the field, this being the primary method to prevent distress oil from being sold in the district, and thereby possibly weakening the price structure. Purchasing companies generally connect to wells on leases on which they already have gathering lines and connections, but are naturally slow in running lines to wells distant from their systems, as all of them now have more connections than they desire, and do not want to go to more expense in laying more gathering lines than they can possibly avoid.

Unexpected Water

One of the most interesting and possibly far reaching incidents in the field was reported this week on the British-American Oil Producing Co.'s Stone lease near the center of the M. J. Prue Survey, in the heart of the widest part of the Joiner area, Rusk County. This well, according to field reports, is making some water, and is to be plugged back, offset wells not showing any water at present. Total depth of the Stone well is minus 3,298 feet, or 22 feet above the known water level in the field, consequently it should not have developed any water troubles this early in the life of the well and the field. Offset wells will be closely watched, and those which are producing at around the same level may be expected to show the same danger signs long before they were estimated to do so. This is one of the oldest and heaviest drilled areas in the field, but salt water encroachment was not expected in it for a long time. However, as many paradoxes have come to pass in the field, anything may be expected, and this is another incident which may be written in the annals of the district, apparently one of the most ominous yet reported.

The Juan Ximenes Survey holds the greatest number of pumping wells in the field. In it is located the Joiner discovery well. This survey is to the east, and adjacent to the Prue Survey, also containing many pumpers on the east side. These were the two main low pressure areas in the field, and the advent of salt water to the west of these pumpers is something more to cause reconsideration and estimating by production men, geologists and petroleum engineers who are working in and studying the field.

The well may be lower, structurally, than offset or nearby wells, thereby accounting for its showing water, but regardless of this fact, the danger of nearness of water cannot be overlooked, and all producers in this area will be closely watching their wells for the first sign of water. It is 16,500 feet east of the nearest west edge well which is making salt water.

Upshur County

Roeser and Pendleton's No. 2-B Nicholson, in a 75-acre tract in the Marshall Mann Survey, Upshur County, on the north edge of the field, but surrounded by producers, was abandoned this week at a total depth of 3,676 feet in Georgetown lime, coring no sand. It is approximately 1½ miles from the northern limits of the field, and by all rights should have made a producer.

The Columbia Oil & Gas Co. has tested a well on one of its leases in the D. Sanches Survey to determine the gas-oil ratio curve to check or verify statement issued by another operator in regard to the gas-oil ratio and pressure on his well during a similar test. Information has not yet been obtained in regard to the Columbia test. The well is in Gregg County.

Kilgore Marker

Travis and Crosby's No. 1 H. P. Lodge in the Mary Van Winkle Survey, on the east edge of the Kilgore area, Gregg County, is apparently another edge marker as it failed to respond after a 30-quart shot from 3,550-70 feet. It is now cleaning out, but does not look favorable as a producer.

Solar Drilling Co.'s No. 1 Leech in the J. C. Barnett Survey, Kilgore area, Rusk County, made a 12-bbl. flow per hour through 1-inch tubing potential this week, thereby extending the area approximately one-half mile to the east in the form of a bulge. Total depth of the hole is 3,543 feet. It is around 1½ miles south of the town of Kilgore.

Sinclair Prairie Oil Co.'s interesting test on the Tipps farm in the northeast corner of the P. F. Poindexter Survey, southern Rusk County, was completed this week making 47 bbls. in one-half hour through open 2½-inch tubing, from a total depth of 3,694 feet. Sand was topped 3,682 feet. This well is approximately midway between production on the east and Clopton's No. 1 Pace dry hole on the west, and 1½ miles south of The Texas Company's No. 1 Kersh, thereby extending production farther to the southwest in the field.

Edge Leases

Major companies continue to farm out edge leases, figuring that it will be cheaper to let some one else develop them and handle the later salt water disposal problem, than to hold them and develop the leases themselves. The Humble Oil & Refining Co. sold its Eva O'Byrne "D" lease in the William King Survey, comprising 154.6 acres, with one producing well, and its "C" lease of 56 acres and one producing well in the J. R. Watkins Survey, on the northwest edge of the field, Upshur County, to Sam Dorfman and others for a reported consideration of $150,000 out of one-half of seven-eighths of the oil produced.

The Gulf Production Co. farmed out to Steve Ryan its 17-acre Turner lease in the M. Hussner Survey, and its 118.5-acre Turner lease in the D. W. Campbell Survey, including one well which is making 30 per cent basic sediment and salt water. Payment is to be made out of oil. The two leases are located on the west edge of the Joiner area in Smith County.

The Amerada Petroleum Corp. farmed out its R. S. McKinley 41-acre lease in the William Robinson Survey, Gregg County, to W. E. Mack for a reported sum of $65,000 out of one-quarter of the oil produced.

But while some of the major producers in the district are selling or farming out some of their leases the Tidal Oil Co. has been acquiring leases from time to time. However, these leases are located within the producing area, and not on the edges of the field. The latest purchase was made from the Texas Gulf Producing Co., and involved three small leases on the Buntyn farm in the W. W. Simms and J. C. Show Surveys in northern Rusk County. Six wells were included in the deal, and six more wells will be drilled on the leases which cover 82 acres.

Mustang Oil Co.'s No. 1 Decker and others in the F. W. Fulgham Survey, an interesting wildcat in Cherokee County, is drilling below 5,000 feet.

East Texas Wildcats

Lee Timberlake has taken a 15,000-acre block entering in the Martha Poor Survey, 6½ miles southwest of New Boston in Bowie County and will drill a Woodbine sand test. The test will be approximately 5½ miles southwest of the Tidwell dry hole drilled some time ago.

Tom Bell of Vivian, La., has assembled a block of 12,000 acres adjoining the above block and will start a Woodbine test in 30 days after completion of block and checking titles.

Clark Brooks of Fort Worth have taken 9,000 acres for a block, centering in the Edward Branch Survey, Ellis County, and F. E. Bilbreath of Ada, Okla., is working on a block near the town of Mount Vernon in Franklin County. Tests will probably be drilled on both blocks.

Allday and Shuffler have taken a block of 6,500 acres centering in the Midkiffe, Allen and Skinner Survey, 1 mile northwest of Middleton, and 6 miles southeast of Centerville, in Leon County and will start a test immediately.

Joe Marr Drilling Co.'s No. 1 Lacy in the J. H. Sparks Survey, approximately 1 mile west of the Wemack Oil Co.'s gasser on the Arnold farm, is promising to make another gasser, and extending the gas area southwest in southern Rusk County. In a core to 3,695 feet, 1½ feet of sandy shale was recovered indicating gas. The company is coring ahead.

Lowest Per Well Allowable

The East Texas Field, with an allowable of 59 bbls. per well, has the fourth lowest per well allowable of all Texas fields. The Crane-Upton County fields have the lowest of 28 bbls., but these fields are sadly depleted, and most of the wells making water, consequently it can hardly be ranked with East Texas in regard to the per well allowable. It is in a similar position to old producing areas in the Ranger and Wichita Falls district, which have small allowables, and which are on the pump. Ector County has a per well allowable of 53 bbls. daily. The next East Texas allowable may be cut to almost this amount. Howard-Glasscock has a per well allowable of 40 bbls. daily, and the Salt Flat Field has an allowable of 37 bbls. per well. All of these fields are much older than the East Texas Field. The Van Field, East Central Texas, has the highest per well allowable of any field in Texas, 161 bbls. daily.

Several arrests were made in the district this week in connection with previous indictments returned against persons who were alleged to be implicated in by-passing and stealing oil. Producers who fail to reckon with the fee and royalty owners may expect to run into trouble from these parties if oil is by-passed or not accounted for. Force by fee owners and royalty owners has shown its hand in some cases, and in others interested parties have threatened, and in other cases have asked for receivership of companies operating on their land. The latter method may be the quickest and most satisfactory from the standpoint of those who run a chance of losing royalty payments from oil which is by-passed and not accounted for.

COMPLETIONS IN EAST TEXAS

North Gregg County

Amerada Petroleum Corp.'s No. 3 Burnside, location abandoned; No. 5 Continental State Bank, top sand 3,470 feet, initial production 18 bbls. in one-fourth hour through 1-inch tubing choke, total depth 3,595 feet. Atlantic and Sun Oil companies' No. 1-C R. C. Barnswill, top sand 3,467 feet, initial production 22 bbls. per hour through tapered tubing, total 3,501 feet. Atlantic Oil & Production Co.'s No. 5 McBee Fisher, top sand 3,469 feet, initial production 22 bbls. per hour through tapered tubing, total depth 3,499 feet. Barnsdall and Sun Oil companies' No. 7 Bingham, top sand 3,507 feet, initial production 111 bbls. per hour

through 2½-inch tubing choke, total depth 3,553 feet. East Texas Refining Co.'s No. 4 A. Christian, location abandoned. Danciger Oil & Refining Co.'s No. 2 G. S. Mattox, top sand 3,587 feet, initial production 18 bbls. in 10 minutes through 2-inch tubing, total depth 3,610 feet.

Empire Gas & Fuel Oil Co.'s No. 3 Bumpass, top sand 3,480 feet, initial production 40 bbls. in one-fourth hour through open tubing, total depth 3,545 feet; No. 2 J. T. Jeter, top sand 3,593 feet, initial production 43 bbls. in one-fourth hour through 2½-inch tubing choke, total depth 3,615 feet; No. 9 Jeter, top sand 3,515 feet, initial production 42 bbls. in one-fourth hour through 2½-inch tubing choke, total depth 3,576 feet. F. H. E. Oil Co.'s No. 5 J. E. Christian, top sand 3,601 feet, initial production 62 bbls. per day through various chokes, total depth 3,628 feet; No. 6 J. E. Christian, top sand 3,612 feet, initial production 60 bbls. in 40 minutes through 1-inch tubing choke, total depth 3,640 feet. Fain and McGaha's No. 2 R. Corbin, top sand 3,541 feet, initial production 70 bbls. in one-half hour through 1-inch tubing choke, total depth 3,583 feet.

Gulf Production Co.'s No. 5 Bozeman, top sand 3,569 feet, initial production 80 bbls. per hour through three-fourths-inch tubing choke, total depth 3,606 feet; No. 10 F. C. Fishburn, top sand 3,479 feet, initial production 80 bbls. per hour through three-fourths-inch tubing choke, total depth 3,508 feet. P. L. Hoffman and others' No. 2 Phillips, top sand 3,614 feet, initial production 40 bbls. in one-fourth hour through 2½-inch open tubing, total depth 3,672 feet. Humble Oil & Refining Co.'s No. 9 W. R. Hughes, top sand 3,611 feet, initial production 82 bbls. per hour through three-fourths-inch tubing choke, total depth 3,634 feet. B. K. Isaac's (receiver) No. 2 T. B. Harris, top sand 3,511 feet, initial production 60 bbls. per hour through 1-inch tubing choke, total depth 3,522 feet. Kewanee Oil & Gas Co.'s No. 11 fee, top sand 3,532 feet, initial production 45 bbls. in one-fourth hour through 1-inch tubing choke, total depth 3,568 feet.

Magnolia Petroleum Co.'s No. 11 Everett estate, top sand 3,625 feet, initial production 232 bbls. per hour through 2-inch open tubing, total depth 3,630 feet; No. 16 J. W. Free, top sand 3,625 feet, initial production 191 bbls. per hour through 2-inch open tubing, total depth 3,646 feet; No. 2 Tate, top sand 3,445 feet, initial production 131 bbls. per hour through open 2-inch tubing, total depth 3,461 feet. Meridian Oil Co.'s No. 4 T. W. Lee, top sand 3,630 feet, initial production 64 bbls. in one-fourth hour through open 2½-inch tubing, total depth 3,642 feet. Midas Oil Co.'s No. 3 A. V. Bacle, top sand 3,637 feet, initial production 62 bbls. per day through various chokes, total depth 3,662 feet; No. 4 A. V. Bacle, top sand 3,590 feet, initial production 100 bbls. per hour through 1-inch tubing choke, total depth 3,615 feet.

Pilot Oil Co.'s No. 4 T. B. Harris, top sand 3,509 feet, initial production 250 bbls. per hour through open tubing, total depth 3,528 feet. Roeser and Pendleton's No. 2 Fenton, top sand 3,612 feet, initial production 72 bbls. per hour through open tubing, total depth 3,635 feet. Selby & Lewis' No. 4-B Snavely heirs, top sand 3,556 feet, initial production 115 bbls. per hour through 1-inch tubing choke, total depth 3,585 feet. Selby Oil & Gas Co.'s No. 5-D Snavely heirs, top sand 3,543 feet, initial production 82 bbls. per hour through tubing choke, total depth 3,590 feet.

Shell Petroleum Corp.'s No. 4 Basshorn, top sand 3,575 feet, initial production 10 bbls. in 30 minutes through tapered tubing, total depth 3,664 feet. Simms and Stanolind Oil & Gas Co.'s No. 5 A. J. Tuttle, top sand 3,615 feet, initial production 120 bbls. per hour through open 2-inch tubing, total depth 3,530 feet. Sinclair Prairie Oil Co.'s No. 6-A J. W. Akin, top sand 3,568 feet, initial production 59 bbls. in 15 minutes through 2½-inch tubing, total depth 3,598 feet; No. 5-B J. W. Akin, top sand 3,545 feet, initial production 59 bbls. in 14 minutes through 2½-inch open tubing, total depth 3,575 feet. Stanolind Oil & Gas Co.'s No. 3-C M. B. Harley, top sand 3,594 feet, initial production 29 bbls. in 20 minutes through 1½-inch tubing choke, total depth 3,664 feet. Sun Oil Co.'s No. 7 J. W. Adkins, top sand 3,527 feet, initial production 46 bbls. per hour through tapered tubing, total depth 3,591 feet; No. 6 J. C. Gray, top sand 3,599 feet, initial production 27 bbls. per hour through tapered tubing, total depth 3,666 feet; No. 6 Tate, top sand 3,483 feet, initial production 96 bbls. per hour through open 2-inch tubing, total depth 3,551 feet; No. 3-B Tooke, top sand 3,536 feet, initial production 36 bbls. per hour through tapered tubing, total depth 3,597 feet.

Superior Oil Co.'s No. 7 A. Jones, top sand 3,576 feet, initial production 85 bbls. per hour through 1-inch tubing choke, total depth 3,653 feet; No. 5-A Pritchard, top sand 3,512 feet, initial production 47 bbls. in 15 minutes through 1-inch tubing choke, total depth 3,563 feet. Tidal Oil Co.'s No. 11 A. Castleberry, top sand 3,573 feet, initial production 14 bbls. in 10 minutes through 2-inch open tubing, total depth 3,596 feet. Yount-Lee Oil Co.'s No. 2 A. A. Castleberry, top sand 3,583 feet, initial production 31 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,628 feet; No. 3-A J. C. McKinley, top sand 3,545 feet, initial production 81 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,565 feet.

Adams and Lyles' No. 1 L. Howard, top sand 3,628 feet, initial production 59 bbls. per day pinched, total depth 3,640 feet. Atlantic Oil & Production Co.'s No. 4 Clayton heirs, top sand 3,526 feet, initial production 22 bbls. per hour through tapered tubing, total depth 3,557 feet. Atlantic and Byrd-Frost's No. 7 M. B. Hughey, top sand 3,559 feet, initial production 22 bbls. per hour through tapered tubing, total depth 3,595 feet. Continental Oil Co.'s No. 1 A. A. King, top sand 3,681 feet, initial production 45 bbls. in 15 minutes through open tubing, total depth 3,690 feet. Cranfill and Reynolds' No. 2 R. L. Martin, top sand 3,630 feet, initial production 42 bbls. in 15 minutes through open tubing, total depth 3,634 feet. John Owen's No. 1 M. T. Cole, top sand 3,535 feet, initial production 60 bbls. in 30 minutes through open tubing, total depth 3,545 feet.

Empire Gas & Fuel Oil Co.'s No. 3 A. Lockhart, top sand 3,524 feet, initial production 50 bbls. in 15 minutes through 2-inch tubing on 2½-inch tubing, total depth 3,574 feet; No. 2 Walker, top sand 3,564 feet, initial production 44 bbls. in 15 minutes through 2-inch open choke, on 2½-inch tubing, total depth 3,576 feet. Everts Drilling Co.'s No. 1 Cooke, top sand 3,653 feet, initial production 50 bbls. per day pinched, total depth 3,636 feet.

Gulf Production Co.'s No. 5 C. Brown, top sand 3,490 feet, initial production 87 bbls. per hour through three-fourths inch tubing choke, total depth 3,505 feet; No. 8 M. T. Cole, top sand 3,538 feet, initial production 72 bbls. per hour through three-fourths inch tubing choke, total depth 3,546 feet; No. 19 Culver, top sand 3,510 feet, initial production 37 bbls. per hour through three-fourths inch tubing choke, total depth 3,539 feet; No. 22 Hilburn, top sand 3,572 feet, initial production 85 bbls. per hour through three-fourths inch tubing choke, total depth 3,587 feet; No. 10 W. Holt, top sand 3,599 feet, initial production 70 bbls. per hour through three-fourths inch tubing choke, total depth 3,608 feet.

Koberg Oil Co.'s No. 1 L. Martin, top sand 3,674 feet, initial production 70 bbls. per hour through three-quarters-inch tubing choke, total depth 3,676 feet. Magnolia Petroleum Co.'s No. 9 L. A. Griffin, top sand 3,541 feet, initial production 55 bbls. in five minutes through 1-inch tubing choke on 4-inch line on casing, total depth 3,676 feet; No. 2 Laird-Crim, top sand 3,557 feet, initial production 132 bbls. per hour through 2-inch open tubing, total depth 3,567 feet; No. 5 John Radford, top sand 3,708 feet, initial productionl 152 bbls. per hour through 1-inch tubing choke, total depth 3,715 feet. Kniventon Oil Co.'s (formerly Mission Oil Co.) No. 1 W. P. Crews, top sand 3,706 feet, initial production 65 bbls. in one-half hour through 1-inch tubing choke, total depth 3,712 feet. Republic Production Co.'s No. 3 Clayton heirs, top sand 3,560 feet, initial production 45 bbls. in one-half hour through open tubing, total depth 3,581 feet.

Shell Petroleum Corp.'s No. 5 J. S. King, top sand 3,615 feet, initial production 7 bbls. in one-quarter hour through open tapered tubing, total depth 3,615 feet; No. 6 J. S. King, top sand 3,639 feet, initial production 8 bbls. in one-quarter hour through tapered tubing, total depth 3,642 feet; No. 4 B. F. Laird, top sand 3,548 feet, initial production 16 bbls. in one-half hour through tapered tubing, total depth 3,578 feet; No. 4 J. T. Neal, top sand 3,513 feet, initial production 11½ bbls. in one-quarter hour through tapered tubing, total depth 3,584 feet. Sinclair Prairie Oil Co.'s No. 20 M. T. Cole, top sand 3,563 feet, initial production 59 bbls. per hour through open 2½-inch tubing, total depth 3,568 feet; No. 22 M. T. Cole, top sand 3,663 feet, initial production 40 bbls. in one-quarter hour through open 2½-inch tubing, total depth 3,667 feet; No. 24 M. T. Cole, top sand 3,591 feet, initial production 59 bbls. per hour through tubing swabbing, total depth 3,594 feet; No. 16-A A. A. King, top sand 3,462 feet, initial production 50 bbls. in 13 minutes through open 2½-inch tubing, total depth 3,495 feet; No. 17-A A. A. King, top sand 3,454 feet, initial production 59 bbls. in one-quarter hour through open tubing, total depth 3,488 feet; No. 18-A A. A. King, top sand 3,462 feet, initial production 50 bbls. in 12 minutes through open tubing, total depth 3,495 feet; No. 14-B A. A. King, top sand 3,447 feet, initial production 59 bbls. in one-quarter hour through open tubing, total depth 3,480 feet; No. 15-B A. A. King, top sand 3,459 feet, initial production 50 bbls. in 10 minutes through open tubing, total depth 3,490 feet; No. 16-B A. A. King, top sand 3,470 feet, initial production 60 bbls. in 12 minutes through open tubing, total depth 3,500 feet; No. 3-B A. A. King, top sand 3,429 feet, initial production 30 bbls. in 10 minutes through open tubing, total depth 3,456 feet; No. 4 J. E. Lawther, top sand 3,498 feet, initial production 59 bbls. in one-half hour through open tubing, total depth 3,548 feet; No. 5 A. A. Lockhart, top sand 3,674 feet, initial production 35 bbls. in one-half hour through open tubing, total depth 3,683 feet; No. 6 A. A. Lockhart, top sand 3,626 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,636 feet. Sun Oil Co.'s No. 3 J. S. Elder, top sand 3,527 feet, initial production 59 bbls. per day pinched through tubing, total depth 3,566 feet.

The Texas Company's No. 5 M. T. Cole, top sand 3,517 feet, initial production 138 bbls. per hour through open 2-inch tubing, total depth 3,560 feet. Tidal Oil Co.'s No. 11 Hughey, top sand 3,509 feet, initial production 204 bbls per hour through open casing and tubing, total depth 3,563 feet; No. 7 King, top sand 3,548 feet, initial production 60 bbls. per hour through open casing and tubing, total depth 3,606 feet. Standard Oil Co. of Kansas' No. 1 J. A. Knowles, top sand 3,613 feet, initial production 46 bbls. in one-quarter hour through open 2½-inch tubing, total depth 3,626 feet.

Harcker Oil Co.'s (formerly Vance and Fagan) No. 1 Alexandria, top sand 3,537 feet, initial production 170 bbls. per hour through 1-inch choke on 2-inch tubing, total depth 3,586 feet. Everts and others' No. 1 D. M. Barton, top sand 3,551 feet, initial production 59 bbls. per day by heads, total depth 3,585 feet. Weaver-Crim Corp.'s No. 6 Ben Laird, top sand 3,577 feet, initial production 40 bbls. in one-quarter hour through open tubing, total depth 3,600 feet.

North Rusk County

Bay Oil Corp.'s No. 4 W. P. Moore, top sand 3,799 feet, initial production 77 bbls. per hour through three-quarters-inch tubing, total depth 3,804 feet. East Texas Refining Co.'s No. 2 C. Webb, top sand 3,630 feet, initial production 75 bbls. per hour through 2-inch open tubing, total depth 3,675 feet; No. 8 D. Wills, top sand 3,657 feet, initial production 59 bbls. in one-half hour through three-quarters-inch tubing choke, total depth 3,659 feet. Friedman-Swindler's No. 2 Mrs. C. Holland, top sand 3,700 feet, initial production 59 bbls. per day pinched, total depth 3,702 feet.

Gulf Production Co.'s No. 13-C C. Christian, top sand 3,737 feet, initial production 92 bbls. per hour through three-quarters-inch tubing choke, total depth 3,753 feet. Humble Oil & Refining Co.'s No. 53 Crim, top sand 3,672 feet, initial production 45 bbls. per 30 minutes through three-quarters-inch tubing choke, total depth 3,726 feet; No. 54 Crim, top sand 3,642 feet, initial production 58 bbls. in one-half hour through three-quarters-inch tubing choke, total depth 3,647 feet. Louisiana Oil & Refining Co.'s No. 6 Jernigan, top sand 3,613 feet, initial production 62 bbls. in one-half hour through 1-inch tubing choke, total depth 3,645 feet. Shasta Oil Co.'s No. 2 H. Alexandria, top sand 3,617 feet, initial production 25 bbls. in one-quarter hour through 1-inch tubing choke on 2-inch tubing. Solar Exploration Co.'s No. 1

EAST AND EAST CENTRAL TEXAS WILDCATS

Week Ending May 30

ANDERSON COUNTY

Company, well, farm name, section and block—	Remarks:
Roeser and Pendleton's No. 1 M. A. Davy, 660 ft. from N line and center of E and W lines of tract and survey, P. G. Adams Sur.	Derrick.
C. R. Wilmuth et al's No. 1 N. B. Watson, 500 ft. from W line and 4,850 ft. from N of S line of survey in S½ of 139-ac. tract, M. Main Sur.	T.D. 1,538 ft.

ANGELINA COUNTY

Helburt et al's No. 1 Long Bell Lumber Co., 160 ft. from S line and 200 ft. from E line of Sec. 9, H.&T.B. Sur.	Location.

BOWIE COUNTY

Burnham-Robertson and Greer's No. 1 F. O. Weiss, 850 ft. from N line and 200 ft. from W line of B. H. Williams 50-ac. tract, Jessie Dean Sur.	Drlg. 2,927 ft.
Les Timberlake's No. 1 C. E. McElwee, 250 ft. from S line and 450 ft. from W line of 160-ac. tract, M. A. Poer Sur.	Drlg. 1,700 ft.

CHEROKEE COUNTY

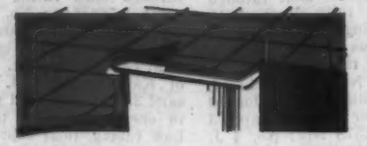
Bridges and Candler's No. 1 Berryman, center of Berryman tract, H. Kimble Sur.	S.D. 1,000 ft.
Mid-Kansas Oil & Gas Co.'s No. 2 H. D. Kelley, 330 ft. from S line and 1,215 ft. from E line of 86.3-ac. tract, M. De Los Santos Coy Sur.	Bldg. derrick.
Mid-Kansas Oil & Gas Co.'s No. 18 M. M. Cross, 880 ft. from N line and 537 ft. from W line of lease, E. B. Fowlkes Sur.	Bldg. derrick.
Mustang Oil Co.'s No. 1 Decker and Whiteman, east side of W 75 acres of S 150 acres of survey, 3 miles S of Maydelle, F. W. Fulgham Sur.	Drlg. 4,985 ft.
Pilot Oil Co.'s No. 1 Annie Kelley, center of 10-ac. lease, M. De Los Santos Coy Sur.	Derrick.
William A. Stone's No. 1 J. T. Perkins, 200 ft. from NW cor. of lease, Thomas Stanford Sur., 8 miles S of Ponta	S.D. 60 ft.
Dr. Tubbs et al's No. 1 J. H. Sharp, 330 ft. from N line and 71 ft. from E and W lines of 3¼-ac. tract, M. De Los Santos Coy Sur.	Preparing to sidetrack 2,705 ft.
Wilson & Stubbs' No. 1 L. Robert, 450 ft. from S and 150 ft. from W line of lease, J. B. Wolfin Sur.	Rigging up after skidding rig.

DELTA COUNTY

Commerce Oil Co.'s No. 1 Ablowich, 150 ft. from S line and 774 ft. from W line of H. D. Jewett 52-ac. tract, E. Chick Sur.	S.D. 3,733 ft.

(Continued on Page 54)

AVOID
»»» BUSINESS RUST «««



Rates
On
Application

A good mechanic keeps his machinery oiled, even if it is not working all of the time. Rusting is prevented—and everything is "ready to go" when needed.

While your business may not be at the top of the chart just at present—it is probably true that you expect to buy or sell more goods as conditions improve. Surely you are not letting any idle equipment you may have deteriorate—what about your good will?

The petroleum industry is in "good working order"—its products are in greater use today than ever before. You cannot afford to let the contacts you have made in the past years go long without a friendly call now and then.

The one best, and most economical way, to keep in touch with your many customers in the petroleum field is through use of space regularly in The Oil and Gas Journal. Here you may reach the largest number of readers at the lowest rates available in any trade publication of this great industry.

The OIL and GAS JOURNAL

PRODUCING REFINING PIPELINE ENGINEERING MARKETING

TULSA, OKLA.

Advertising Representatives

C. L. CAIN
Room 412-415 Lexington Ave.
New York, N. Y.

HOWARD MARKT
1105 Leader Bldg.
Cleveland, Ohio

C. R. FARMER
Room 1416, 6 N. Michigan Blvd.
Chicago, Ill.

R. P. (Salty) CLARK
114 West Second St.
Tulsa, Okla.

J. H. Leach, top sand 3,505 feet, initial production 12 bbls. per hour through tapered tubing, total depth 3,543 feet, now dead.

South Rusk County

Anderson and others' No. 1 E. B. Alford, top sand 3,596 feet, initial production 15 bbls. per hour pumping, total depth 3,743 feet. Bussa and others' No. 3 W. P. Britt, top sand 3,709 feet, initial production 40 bbls. in one-half hour through open tubing estimated, total depth 3,760 feet. Cullen Oil Co.'s No. 2 A. Thrash, top sand 3,671 feet, initial production 45 bbls. in one-half hour through open tubing, total depth 3,741 feet. Demonstrand Oil Corp.'s No. 2 Pinkston, top sand 3,595 feet, initial production 150 bbls. per hour through open tubing, total depth 3,627 feet. Devonian Oil Co.'s No. 6 Alford, top sand 3,765 feet, initial production 85 bbls. per hour through three-quarters-inch tubing choke, total depth 3,773 feet. R. W. Fair and others' No. 1 E. B. Alford, top sand 3,568 feet, initial production 50 bbls. per hour through open 2-inch tubing, total depth 3,630 feet. Federated Oil Co.'s No. 4 Mayfield-Alford, top sand 3,600 feet, initial production 61 bbls. per hour pumping, total depth 3,676 feet.

Great Plains Oil Co.'s No. 4 Samp Stone, top sand 3,664 feet, initial production 59 bbls. in 22 minutes through open tubing, total depth 3,687 feet. Gulf Production Co.'s No. 4 L. P. Thrash, top sand 3,682 feet, initial production 60 bbls. per hour through three-quarters-inch tubing, total depth 3,700 feet. Hugh Edwards Hale's No. 2 Marshall Clay, top sand 3,584 feet, initial production 40 bbls. per hour through open 2-inch tubing, total depth 3,680 feet. H. Houghton's No. 1 Wylie, top sand 3,615 feet, initial production 40 bbls. per hour through open 2-inch tubing estimated, total depth 3,676 feet.

Humble Oil & Refining Co.'s No. 6 J. H. Arnold, top sand 3,768 feet, initial production 42 bbls. in one-half hour through three-quarters-inch tubing choke; No. 5 Odell Blackwell, top sand 3,704 feet, initial production 33 bbls. in one-half hour through three-quarters-inch tubing choke, total depth 3,709 feet; No. 5-A H. A. Piercy, top sand 3,717 feet, initial production 32 bbls. in one-half hour through three-quarters-inch tubing choke, total depth 3,741 feet; No. 9 J. W. Turner, top sand 3,707 feet, initial production 32 bbls. in one-half hour through three-quarters-inch tubing choke, total depth 3,811 feet; No. 3 C. W. Wilson, top sand 3,609 feet, initial production 57 bbls. per hour through three-quarters-inch tubing choke, total depth 3,701 feet.

H. L. Hunt's No. 2 Sue Hale, top sand 3,610 feet, initial production 25 bbls. per hour through open 2-inch tubing, total depth 3,710 feet; No. 2-C Joe Lee, top sand 3,746 feet, initial production 50 bbls. in 20 minutes through open 2-inch tubing, total depth 3,748 feet. E. W. Jones' No. 3 W. P. Moore, top sand 3,626 feet, initial production 40 bbls. in 30 minutes through open tubing, total depth 3,646 feet. Kenwood Oil Co.'s No. 3 Deason, top sand 3,700 feet, initial production 30 bbls. in 15 minutes through open 2½-inch tubing, total depth 3,795 feet. Lion Oil & Refining Co.'s No. 3 William Jobe, top sand 3,620 feet, initial production 60 bbls. per hour through 1¼-inch tubing choke, total depth 3,705 feet. John Mabee's No. 2 Samp Stone, top sand 3,620 feet, initial production 100 bbls. in 30 minutes through open tubing, total depth 3,633 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Henry Clay estate, top sand 3,680 feet, initial production 40 bbls. per hour through 2½-inch tubing on 2-inch lead, total depth 3,733 feet; No. 5 C. L. Graham, top sand 3,622 feet, initial production 110 bbls. per hour through 2½-inch tubing on 2-inch lead, total depth 3,647 feet; No. 7 J. F. Mason, top sand 3,648 feet, initial production 80 bbls. per hour through 2½-inch tubing, total depth 3,711 feet; No. 3 J. M. Price, top sand 3,623 feet, initial production 90 bbls. per hour through open 2½-inch tubing on 2-inch lead, total depth 3,699 feet.

Sinclair Prairie Oil Co.'s No. 2 Grissom, top sand 3,670 feet, initial production 25 bbls. in 15 minutes through open tubing, total depth 3,687 feet; No. 1 Allen Kersh, top sand 3,653 feet, initial production 45 bbls. in 15 minutes through open tubing, total depth 3,665 feet; No. 27 Kinney, top sand 3,645 feet, initial production 35 bbls. in 13 minutes through open tubing, total depth 3,637 feet; No. 1 Peter Tipps, top sand 3,682 feet, initial production 47 bbls. in 30 minutes through open 2½-inch tubing, total depth 3,694 feet. Stanolind Oil & Gas Co.'s No. 3 Mason, top sand 3,605 feet, initial production 30 bbls. in 20 minutes through open tubing, total depth 3,619 feet. Stanolind and Pure Oil Co.'s No. 3 R. J. Burton, top sand 3,561 feet, initial production 25 bbls. in 15 minutes through 1-inch tubing, total depth 3,615 feet; No. 6 R. A. Moores, top sand 3,597 feet, initial production 30 bbls. in 15 minutes through 1¾-inch tubing choke, total depth 3,603 feet; No. 3 W. H. Siler, top sand 3,587 feet, initial production 25 bbls. in 10 minutes through 2-inch tubing, total depth 3,629 feet. Sun Oil Co.'s No. 2 Shuler and Shuler, top sand 3,602 feet, initial production 40 bbls. per hour through open tapered tubing, total depth 3,648 feet.

The Texas Company's No. 3 J. M. Price, top sand 3,574 feet, initial production 66 bbls. per hour through 2-inch tubing, total depth 3,610 feet. Ward Oil Co.'s No. 6 Finney, top sand 3,656 feet, initial production 58 bbls. per hour through open 2-inch tubing, total depth 3,690 feet.

Smith County

Iowa Payne Oil Co.'s No. 2 J. B. Wilson, top sand 3,756 feet, initial production 60 bbls. in 30 minutes through 2½-inch tubing choke, total depth 3,761 feet. Mid-Kansas Oil & Gas Co.'s No. 8 M. L. Thompson, top sand 3,637 feet, initial production 118 bbls. per hour through 2½-inch tubing on 2-inch lead, total depth 3,637 feet.

Sinclair Prairie Oil Co.'s No. 2 E. E. Moore, top sand 3,756 feet, initial production 50 bbls. in 45 minutes through open tubing, total depth 3,749 feet; No. 4 Patterson, top sand 3,714 feet, initial production 22 bbls. in 15 minutes through open tubing, total depth 3,716 feet; No. 6 Amanda Wiley, top sand 3,791 feet, initial production 45 bbls. in 15 minutes through open tubing, total depth 3,793 feet; No. 3 Bunch Wilson, top sand 3,764 feet, initial production 30 bbls. in 30 minutes through open tubing, total depth 3,762 feet. Sun Oil Co.'s No. 3 J. J. Denton, top sand 3,754 feet, initial production 36 bbls. per hour through tapered tubing, total depth 3,758 feet. Summit Drilling Co.'s No. 5 Mayfield, top sand 3,838 feet, initial production 40 bbls. per hour through open tubing, total depth 3,846 feet. The Texas Company's No. 5-A Jarvis, top sand 3,642 feet, initial production 90 bbls. per hour through open 2-inch tubing, total depth 3,652 feet.

Upshur County

Big Indian Oil Co.'s No. 2 W. R. Nicholson, top sand 3,674 feet, initial production 100 bbls. per hour through open tubing, total depth 3,686 feet. East Texas Refining Co.'s No. 3 D. Rodden, top sand 3,711 feet, initial production 105 bbls. per hour through 2½-inch tubing, total depth 3,724 feet. Humble Oil & Refining Co.'s No. 17 J. K. Edwards, top sand 3,648 feet, initial production 45 bbls. per hour through three-fourths inch tubing choke, total depth 3,663 feet; No. 2 Maddox, top sand 3,660 feet, initial production 81 bbls. per hour through three-fourths inch tubing choke, total depth 3,686 feet; No. 2 A. L. Shelton, top sand 3,688 feet, initial production 11 bbls. in 15 minutes through three-fourths inch tubing choke, total depth 3,704 feet; No. 3 A. J. Watkins, top sand 3,667 feet, initial production 70 bbls. per hour through three-fourths inch tubing choke, total depth 3,687 feet.

Manson Oil Co.'s No. 4 J. B. Webb, top sand 3,685 feet, initial production 160 bbls. per hour through 2½-inch tubing choke, total depth 3,718 feet. Mudge Oil Co.'s No. 7-A T. W. Free, top sand 3,636 feet, initial production 100 bbls. per hour through open tubing, total depth 3,681 feet. Perrin and Fell's No. 3 C. C. Landers, top sand 3,729 feet, initial production 60 bbls. per hour through 2½-inch tubing, total depth 3,735 feet. Rancho Oil Co.'s No. 6 Edwards, top sand 3,637 feet, initial production 95 bbls. per hour through 2½-inch tubing choke, total depth 3,656 feet; No. 7 Edwards, top sand 3,626 feet, initial production 85 bbls. per hour through 2½-inch open tubing, total depth 3,646 feet. Texnia Oil Co.'s No. 2 J. W. Free, top sand 3,634 feet, initial production 120 bbls. per hour through 1-inch tubing choke, total depth 3,651 feet. J. A. Woods' No. 2 J. H. Sheppard, top sand 3,581 feet, initial production 50 bbls. in 15 minutes through 2½-inch tubing, total depth 3,609 feet.

TWO PRODUCERS IN MICHIGAN; DRILLING CONTINUES BRISK

By George A. Whitney

MOUNT PLEASANT, Mich., May 30. Two completions were made in the Central Michigan Field during the week, the largest being Pure Oil Co.'s No. 2-A, 330 feet from the south and east lines of the Bernard farm, SE SE SE, Section 8, Greendale Township, Midland County, in the East Pool, which came in with an initial flow of 800 bbls. from the Dundee formation, while the second completion was made by the Columbia Oil & Gas Co., in No. 1 well, 990 feet from the north line and 330 feet from the west line of William H. Hill and others' farm, SE NW NE, Section 16, same township, with an estimated initial flow of 350 bbls.

Drilling operations continue at a brisk rate in the East Pool, with around 20 wells drilling, although with most of the forced offset drilling completed.

The Vernon Field, in Isabella County, is showing a slight increase in drilling operations.

Wells Nearing Pay Sand

Pure Oil Co.'s test, 990 feet from the north line and 330 feet from the west line of the John J. Bolen farm, W half W half NE, Section 16, Greendale Township, Midland County, drilling around 2,600 feet. Talbot Oil Co.'s No. 4 in the northwest corner of the Frank Adams farm, NW SW SW, Section 10, same township, drilling around 3,200 feet. Gordon Oil Co.'s Skinner 4-B well, 990 feet from the north line and 330 feet from the west line of the lease, in the NW NE NE, Section 16, same township, drilling around 2,700 feet. Bertha L. Jones' No. 1, in the northwest corner of the Jones-Woodruff farm, NW NW SW, Section 13, same township, is drilling around 2,100 feet. G-Lee-P Oil Development Co.'s test in the northeast corner of the Carl W. Schaeffer farm, E half W half SW, Section 12, same township, is drilling around 2,300 feet.

W. L. McClanahan, Inc.'s No. 1 well, 990 feet from the north and east lines of the Hughes estate, SW NE NE, Section 20, Geneva Township, Midland County, is drilling around 3,300 feet. This is a pure wildcat and if it comes in a producer, will add much undeveloped territory north of the East Pool.

Field Pickups

Pure Oil Co. is drilling No. 1 well 990 feet from the north line and 330 feet from the east line of the Mary Jacobs, N half SE, Section 9. Same company has a location for No. 2-A, in the southwest corner of the J. W. Holmes, W half SE, Section 8, also a location for No. 1 in the northeast corner of the Edward O. Harris and others' farm, NE NE SW, Section 15, and a location in the southwest corner of the Charles Mullett and others' farm, SW SW NE, Section 15, Greendale Township.

In the same township, W. L. McClanahan, Inc., is drilling No. 1 well, 990 feet from the north line and 330 feet from the east line of the Roy Kaywood farm, SE NE SE, Section 36, also drilling No. 1 in the southwest corner of the Schaffer farm, SW SW SW, Section 12. Talbot Oil Co. is drilling No. 4 in the northwest corner of the Frank Adams farm, NW SW SW, Section 10.

In Vernon Township, Isabella County, John C. Arthurs, Inc., is drilling No. 1 in the northwest corner of the Bowman farm, W half N half NW, Section 27. The Milford Oil & Gas Co. made a location for No. 1 Harring estate, Section 22, same township.

The test on the Chemical State Savings Bank land in the SW SE, Section 21, Ingersoll Township, Midland County, drilling by W. Hunter Atha, is down around 2,000 feet. Michigan Pacific Oil & Gas Co. is drilling in the northeast corner of the John Otway farm, NE SE NE, Section 27, Porter Township, Midland County.

Gordon Oil Co. made a location 990 feet from the north line and 330 feet from the west line of the T. H. Taulker farm, SW NW SW, Section 7, Lee Township, Midland County.

ROCKY MOUNTAIN RUNS

Average daily pipe line runs from fields in the Rocky Mountain territory for the week ended May 28 follow:

	Bbls.
WYOMING	
Salt Creek	22,620
Badger Basin	50
Big Muddy	1,620
Byron-Garland	1,760
Dallas-Derby	590
Dutton Creek	70
Elk Basin	890
Ferris	20
Frannie	930
Grass Creek	1,910
Hamilton Dome	770
Hudson	440
LaBarge	1,190
Lance Creek	110
Lost Soldier	2,610
Midway	...
Oregon Basin	...
Osage	880
Pilot Butte	30
Rock River	1,660
Poison Spider	40
Teapot	20
Total Wyoming	38,210
MONTANA	
Buckley-Border	540
Cat Creek	860
Dry Creek	1,230
Kevin-Sunburst	4,150
Lake Basin	60
Pondera	1,740
Total Montana	8,640
COLORADO	
Florence	360
Fort Collins	760
Iles	820
Moffat	700
Orchard	320
Rangely	80
Tow Creek	270
Total Colorado	3,310
NEW MEXICO	
Rattlesnake	...
Hogback	380
Table Mesa	80
Artesia	590
Cap Rock	230
Hobbs	30,410
Jal	815
Lea City	1,810
Eunice	490
Texas Pacific	90
Total New Mexico	34,895
Total Rocky Mountain area	85,055
Total previous week	86,356
Difference	1,301

SHREVEPORT GEOLOGISTS

SHREVEPORT, La., May 30.—The Shreveport Geological Society plans for its ninth annual field trip a visit to the outcrops of the principal Tertiary formation of Mississippi and Alabama. The trip begins at Jackson, Miss., at 7:15 a.m. on June 10, and the first day ends at Mobile, Ala., a distance of 235 miles. During the day the formations from the Upper Claiborne to the Recent will be seen en route. On the second day the trip begins at Mobile and ends at Jackson, Ala. During the day the Jackson fault and the famous Claiborne Bluff will be visited. The third day of the field trip begins at Jackson, Ala., and includes

a traverse over the Hatchetigbee anticline and over excellent outcrops of Tertiary strata between the Hatchetigbee anticline and Meridian, Miss. The trip ends at Jackson, Miss., Sunday night, June 12.

GULF COAST FIELDS

(Continued from Page 48)

It is in the 4,400-foot Miocene pay and topped it unusually high at a point believed near the contact. Bottom of the hole is 4,312 feet where 32 feet and 11 inches of 5-inch screen was set, the well coming in for 1,500 bbls. of pipe line oil daily, 270 pounds pressure, through a one-half-inch choke.

Another good well also was completed in the Rabbs Ridge Field, Fort Bend County, as a part of the development program being carried on there jointly by Humble Oil & Refining Co. and Gulf Production Co. This well was No. 2-B Lockwood & Sharp, which flowed at the rate of 1,075 bbls. daily from the Oligocene pay at 5,230 feet.

Pure Oil Co.'s No. 2 Alliance, completed during April as the discovery well of the Gueydan salt dome, Vermillion Parish, and which went to water after several weeks, and which has been drilling deeper, has picked up another sand at 3,995-4,029 feet, on which 7-inch casing has been cemented at 3,995 feet. The former sand was at 3,552 feet, which flowed initially at the rate of 800 bbls of oil daily.

Shell Petroleum Corp.'s No. 1 Fontenot, third well of the Iowa Field, on the Calcasieu-Jefferson Davis Parish line, at latest report still was swabbing. This test, an east offset to the discovery well (Magnolia Petroleum Co.'s No. 1 Waite) has screen set in sand at 6,895-6,912 feet. A south offset to the discovery well was completed several weeks ago by Shell Petroleum Corp. in its No. 2 Heyd. The Fontenot well was expected to make a better producer than either of the others as it is somewhat higher.

PRESENT NEW THEORY OF LUBRICATION MECHANISM

(Continued from Page 33)

stored by the oil ejected under enormous pressure from the crevices in and under the metal surfaces. The remarkable circumstance is therefore established that any lubrication is essentially high-pressure lubrication.

Function of Film

In the above mechanism of lubrication entirely new functions are ascribed to the free film of lubricant. Incidentally, tests on the new machine have given a basis for serious intimation that lubricants (many if not all) consist of two parts; one performing the functions of the lubricant and the other acting as a colloidal solvent thereto. The present apparatus for measuring viscosity gives figures which apply to the two constituents of the lubricants jointly and none of the existing methods measures the viscosity of the constituents singly. If viscosity has any bearing on the lubricating properties of the oil, it is only the viscosity of the lubricating constituents of the lubricant and not the diluent constituent. Because of this, all present attempts to tie up the viscosity of lubricants with their lubricity are placed under suspicion and will remain so until the "true" viscosity of the lubricants is determined.

A closer knowledge of the mechanism of lubrication is imperatively necessary today. First, because with the speeds and loads used in our present machinery, the difficulty of the problem of lubrication has increased tremendously as compared with even the recent past. We have reached the stage where in order to handle the lubricating problems we have to have a precise knowledge of the behavior of metals toward lubricants and lubricants toward metals. We can no more be satisfied with guesses and assumptions. In the next place, so many lubricants are offered to engineers nowadays and so great is the responsibility of the engineer who is to make selection from among this mass that rapid and reliable methods of testing become exceptionally important and, of course, no testing can be accomplished in a satisfactory manner unless we can place a definite and proper value on the various factors, and that means, unless we have in our minds a clear picture of the mechanism of lubrication. The paper has been prepared for the lubricating engineering committee by William F. Parish, chairman of the committee, formerly chief of the lubrication department of the air service, War Department, and Leon Cammen, consulting engineer.

OLD TIMER RETIRES IN FINDLAY DISTRICT

H. G. Wilson, in charge of the Findlay district for the Buckeye Pipe Line Co., has retired after serving Standard pipe lines in the old Central West district for over 44 years. No one will be appointed to succeed Mr. Wilson, as the company has combined his district with another.

Mr. Wilson, a native of Venango County, Pennsylvania, was left homeless before he was 10 years old, and realizing that there was no one to lean on through his boyhood days, began at a very early age to shift for himself. Getting a messenger boy's job in the Western Union office at Edenburg, Clarion County, Pennsylvania, then a busy oil center, he learned to telegraph, and when he was at the age of the average eighth grade school boy was working as a night telegraph operator for the United Pipe Line Co. in Oil City. He went to school a part of each day. After seeing service at various pipe line centers in Pennsylvania he was transferred to Ohio in 1887 with the Buckeye Pipe Line Co. at Findlay. Thereafter he worked for the Indiana Pipe Line Co. and the Ohio Oil Co. and returned to the Buckeye pipe line. He was placed in charge of the Findlay district in 1916.

EAST AND EAST CENTRAL TEXAS WILDCATS

(Continued from Page 51)

Joiner et al's No. 1 Blackwell, 860 ft. S and 150 ft. from E lines of 375-ac. tract, Dunnetells Sur. ..... Drlg. 2,114 ft. (corrected).

ELLIS COUNTY

Armstrong's No. 1 Milton Cook, SE cor. of 50-ac. tract, S. Frederick Sur. ..... T.D. 215 ft.

Clark Brooks' No. 1 Anderson, SE cor. of 3,900-ac. tract, 10 miles SW of Wachatchie, E. C. Branch Sur. ..... Location.

Community's No. 1 Reeves ..... Waiting on cmt. to set 100 ft.

E. M. Rogers' No. 1 John Lee Winn, 1,650 ft. from E and 150 ft. from S of Orland, Orlo Wheeler Sur. ..... S.D. 1,435 ft.

Worthen Petroleum Co.'s No. 2 Cerf, Mulligan Farm Sur., 88 ft. W of No. 1 ..... Set pipe at 1,642 ft.

FRANKLIN COUNTY

Tom Harper's No. 1 fee, 150 ft. from N line and 200 ft. from E line of 116-ac. tr., W. M. Dawson Sur. .... T.D. 3,207 ft.; preparing to core.

T. E. Mayberry's No. 1 M. L. Edwards, 345 ft. from E line of lease and 6½ miles NW of Mount Vernon, C. R. Miller Sur. ..... Derrick.

GREGG COUNTY

Abernathy and Kirkpatrick's No. 1 Bramlett, 330 ft. from N and W lines of S 25 acres of 32-ac. tract, D. Sanches Sur. ..... Derrick.

Alexander and Rasmussen's No. 1 Dixon, 335 ft. N and 169 ft. W of SE cor. of J. M. Dixon 106.5-ac. tract, I. Beaty Sur. ..... Top sand 3,695 ft.; T.D. 3,697 ft.

Arkansas Fuel Oil Co.'s No. 1 Burnside, 240 ft. from N line and 450 ft. from E line of lease, F. W. Johnson Sur. ..... T.D. 3,465 ft.

Henry L. Allen's No. 1 Bonner Estate, 330 ft. from N and E lines of 19.4-ac. lease, J. McRae Sur. ..... Testing 3,583 ft.

Arkansas Fuel Oil Co.'s No. 1 E. M. Watley, 415 ft. E and 330 ft. N of SW cor. of 43.91-ac. lease, Wm. Robinson Sur. ..... Waiting on cmt. to set; T.D. 3,552 ft.

D. M. Buffington's No. 1 Dansley, 500 ft. W and 200 ft. N of NE cor. of Searight Blackman 100-ac. lease, W. P. Chisum Sur. ..... S.D. 1,700 ft.

Burnham and Johnston's No. 1 Jackson-Sample, 150 ft. from N line of tract and S offset to Zion's No. 1 Barnett, Jacob Taylor Sur. ..... Drlg. 2,370 ft.

Central Drilling Co. et al's No. 1 Castleberry, 150 ft. from N line and 69 ft. from S line, 150 ft. from W line and 450 ft. from E line of 4-ac. tract, D. Sanches Sur. ..... Drlg. 3,400 ft.

Cranfill & Reynolds' No. 1 fee, 330 ft. from W line and center of N and S lines of 8-ac. tract, J. Ruddle Sur. ..... Drlg. 2,380 ft.

Cranfill & Reynolds' No. 1 L. Howard, 330 ft. from S line of lease and center of E and W lines, M. Scott Sur. ..... Rig up.

Deaner et al's No. 1 M. T. Cole, 1,665 ft. from N line and 330 ft. from W line of lease, T. Johnson Sur. .... Location.

Dodd and Markey's No. 1 J. F. Holt, 615 ft. E and 707 ft. N of SW cor. of 200-ac. tract, H. Edwards Sur. .... Derrick.

F. Dodson et al's No. 1 Bacle, 155 ft. from E line and center of N and S lines of E 5 acres, G. W. Hooper Sur. ..... Waiting on cmt. to set 3,625 ft.

Empire Gas & Fuel Co.'s No. 1 H. E. Thomas, 330 ft. from N line and E lines of lease, J. M. Morris Sur. ..... Location.

Ealick and Baxsell's No. 1 J. H. Thomas, 225 ft. from N and S lines and 290 ft. from W line of N 15 acres of 65-ac. tract, H. F. Rogers Sur. ..... T.D. 3,615 ft.; plugged back to 3,585 ft.; swabbing.

Export Petroleum Corp.'s No. 1 Coleman, center of Blk. No. 16, H. R. Holit Sur. ..... Drlg. 1,800 ft.

Foah et al's No. 1 Stencil, center of Blk. No. 55, M. Dillard Sur. ..... Drlg. 2,830 ft.

Gambrill et al's No. 1 Clayborn, 270 ft. S and 174 ft. E of NW cor. of Clayborn 50-ac. tract, J. Beaty Sur. ..... Derrick.

Lewis Godlin's No. 1 E. L. Walker, 330 ft. N of road, 330 ft. from E line of 80.2-ac. tract, M. Dillard Sur. .... Derrick.

Humble Oil & Refining Co.'s No. 1 H. Castleberry, 330 ft. from N and E lines of lease, B. H. Hampton Sur. ..... Drlg. 1,565 ft.

Iowan Payne Oil Co.'s No. 1 Akins, 600 ft. from W line and center of N and S lines of lease, W. H. Castleberry Sur. ..... Derrick.

K. B. Oil Co.'s No. 1 Dickson, 150 ft. from S and 150 ft. from W of 5-ac. lease, Mary Van Winkle Sur. .... S.D. 700 ft.

Lovett-Norr et al's No. 1 Rufus Smith, 1,100 ft. from N line and 750 ft. from W line of lease, R. Slaughter Sur. ..... Set surface csg. 55 ft.

Magnolia Petroleum Co.'s No. 1 Land and Crim, 330 ft. from N line and 338 ft. from E and W lines of 10.78-ac. lease, L. B. Outlaw Sur. ..... Waiting on cmt. to set 3,571 ft.

Magnolia Petroleum Co.'s No. 1 H. P. Hale, 330 ft. from N and W lines of 50-ac. lease, M. V. Winkle Sur. ..... Drlg. 2,567 ft.

Magnolia Petroleum Co.'s No. 1 N. Towles, 140 ft. from N and S lines and 330 ft. from W line of 8.5-ac. tract, John Blair Sur. ..... Location.

Magnolia Petroleum Co.'s No. 1 Warehouse Lot, 150 ft. from N line and 150 ft. from W line of 11.98-ac. lease, M. V. Winkle Sur. ..... Location.

Lee Masters' No. 1 Mrs. F. Thompson, center of Blk. No. 151, M. V. Winkle Sur. ..... Location.

McVey et al's No. 1 Kelly Dixon, 140 ft. NW along corner line of street from E corner of Blk. No. 137 and 655 ft. SW at right angles, M. V. Winkle Sur. .... Drlg. 2,850 ft.

Meridian Oil Co.'s No. 1 G. W. Richey, center of E 2 acres of 11-ac. tract, William Carlton Sur. ..... Derrick.

J. C. O'Brien's No. 1 Maurice Prothro, 330 ft. from W line and center of N and S lines of 8.5-ac. lease, John Blair Sur. ..... Derrick.

J. D. Patty et al's No. 1 J. C. McCormick, 207 ft. SE at right angles to Gladewater-Tyler road and 540 ft. SW of Abernathy and Kirkpatrick's No. 1 Gregston, M. Dillard Sur. ..... Drlg. 3,027 ft.

E. A. Payne et al's No. 1 R. M. Woods, 20 ft. from S line and 31 ft. from W line of 2.13-ac. lease, H. R. Holit Sur. ..... Derrick.

Pennsylvania Oil & Refining Co.'s No. 1 Bonner, 693 ft. W and 330 ft. S of most easterly NE cor. of survey, James McRae Sur. ..... Drlg. 3,587 ft.

Phillips and Lee's No. 1 R. M. Woods, center of Blk. No. 7, H. R. Holit Sur. ..... Rig up.

Pilot Oil Co.'s No. 1 P. McGeorge, 330 ft. from N line and center of E and W lines of 12-ac. lease, P. McAnnelly Sur. ..... S.D. 1,000 ft.

Producers Investment Co.'s No. 1 R. H. Rowland, 150 ft. SW of Crim's No. 1 Producers, M. V. Winkle Sur. ..... Derrick.

Pruitt and Standberry's No. 1 M. B. Hughey, Blk. No. 150, Kilgore Townsite, Mary Van Winkle Sur. ..... Derrick.

Reeves et al's No. 1 W. L. Hestland, center of five-eighths-acre tract, midway from Lampton Church and Sarson's No. 2 Hall, D. Sanches Sur. ..... Drlg. 1,570 ft.

Rhodes Drilling Co.'s No. 1 J. E. Christian, 125 ft. from S line and center of W 2 acres of 4-ac. tract, G. W. Hooper Sur. ..... Drlg. 1,000 ft.

Frank Russell's No. 1 Crimm, center of one-half-acre tract, M. V. Winkle Sur. ..... Rig up and S.D.

Showers and Moncrief's No. 1 A. D. Bacle, center of W 5½ acres of N 11-ac. lease, G. W. Hooper Sur. .... Drlg. 3,270 ft.

Smith and Merriwinkle's No. 1 Jim Gray, west offset to Houston and Heep's No. 4 Hall, D. Dainwood Sur. ..... Derrick.

H. K. Spear et al's No. 1 J. M. Dickson, center of 2-ac. tract, M. V. Winkle Sur. ..... Rig up.

Stroube and Stroube's No. 1 Finley and Thomas, 150 ft. from N line and 330 ft. from W line of 10-ac. lease, C. H. Alexander Sur. ..... Rig up.

Stroube and Stroube's No. 1 Anderson-Harris, 150 ft. from S and E lines of 5-ac. lease, being the E 5 acres of H. W. Wages tract, C. H. Alexander Sur. ..... Waiting on cmt. to set 3,480 ft.; T.D. 3,540 ft.

Sun Oil Co.'s No. 1 J. M. Campbell, 330 ft. from S line and center of E and W lines of lease, G. R. Rains Sur. ..... Derrick.

Travis and Crosby's No. 1 K. P. Lodge Lot, 210 ft. S of Gulf's No. 6 Alexandria and 40 ft. from center line of road, M. V. Winkle Sur. ..... Bailed csg. and tubing

T. J. Tucker's No. 1 Mary Rufus, center of one-half-acre tract, Mary Van Winkle Sur. ..... Rigging up standard rig; T.D. 3,630 ft.

Valentine Oil Co.'s No. 1 Goyne-Hughey, 6,100 ft. from S and 6,800 ft. from W of survey, Mary Van Winkle Sur. ..... Rig up.

C. William et al's No. 1 George Anderson, center of 2½-ac. lease, C. H. Alexander Sur. ..... Testing 3,514 ft.

Winona Oil Co.'s No. 1 Sumi-Wells, 330 ft. from S and E lines of tract, 550 ft. from S line of survey, J. M. Morris Sur. ..... Rig up.

Zion Oil Co.'s No. 1 Barnett, 360 ft. from E and W lines and 330 ft. from south L of lease, E half of W 50 acres of 150-ac. tract, Jacob Taylor Sur. .... Testing 3,751 ft.

HENDERSON COUNTY

B. L. Green et al's No. 1 M. H. Gussett, (old well drilled deeper), 150 ft. from N line and 1,000 ft. from W line of 105.5-ac. tract, 3 miles SW of Mabank, L. D. Stover Sur. ..... S.D. 930 ft.

HILL COUNTY

Sherman-Houseman's No. 1 J. F. Griffith, in Samuel Waddell Sur. ..... S.D. 3,256 ft.

HOPKINS COUNTY

Roark et al's No. 1 Taylor, 220 ft. from N and W lines of 80-ac. tract in the John Polk Sur. ..... S.D. 540 ft.

HOUSTON COUNTY

Nelson's No. 1 Harron, 300 ft. out of NE cor. of 327-ac. tract, J. P. Procella Sur. ..... Spudded and S.D. 37 ft.

T. B. Roberts' No. 1 Pennington, 750 varas W of E line and 500 varas from S line of survey on 186-ac. tract, Ramond LaGarza Sur. ..... T.D. 2,660-66 ft.

HUNT COUNTY

Branson et al's No. 1 Gray ..... Location.

Russell et al's No. 1 Brooks and Quattlebaum ..... S.D. 1,455 ft.

KAUFMAN COUNTY

Sandy Darnell et al's No. 1 Sally Pannill ..... T.D. 1,815 ft.

LAMAR COUNTY

G. W. Davy et al's No. 1 McGustion, 450 ft. from S line, 450 ft. from W line of farm and survey, Galet Wood Sur. ..... Temp. abnd.

Doyle and Jondeau's No. 1 Martin, 990 ft. from N line and 330 ft. from E line of tract, Joseph Deck Sur. ..... S.D. 2,446 ft.

Doyle and Jondeau's No. 1 Horn, 226 ft. from S line and 608 ft. from E line of lease, R. P. Mayor Sur. ..... Drlg. 2,805 ft.

LEON COUNTY

Baiser Drlg. Co.'s No. 1 Dr. J. M. Blair, 1,010 ft. from N line, 1,986 ft. from W line, Sec. 19, Blk. E, Lucia Hibbard Sur. ..... Derrick on ground.

MORRIS COUNTY

Leonard's (Tucker-Fullwood) No. 1 P. M. Staggers, 450 ft. from N line and 150 ft. from E line of 65.5-ac. tract, J. D. Nelson Sur. ..... T.D. 3,551-3,567 ft.; no show of oil and gas.

Olvey et al's No. 1 Gabriel Silbey, 330 ft. from N line and about 500 ft. from W line of lease, 3½ miles NE of Carson, W. O. Matthews Sur. ..... Fishing 3,534 ft.

Geo. L. Pace's No. 1 Walcott, 330 ft. from N and E lines of most northerly NE cor. of survey, 3 miles S of Carson, D. A. Russell Sur. ..... Derrick.

NACOGDOCHES COUNTY

Adams et al's No. 1 Fuller Brothers, located in a 369-ac. tract, Jose Flores Sur. ..... Location.

Taylor-Vaughn's No. 1 Dixon Greer, 160 ft. from W and 450 ft. from N lines of 60-ac. tract in the M. G. Herrera Sur. ..... S.D. 265 ft.

POLK COUNTY

Sunshine Oil Co.'s No. 1 Brawley, 150 ft. from S line and 250 ft. from E line of W 100 acres of lease, F. Johnson Sur. ..... Derrick.

Taylor et al's No. 1 E. L. Duke, 330 ft. from N and W lines of 23.5-ac. tract, SW cor. of county, Peter J. Manard Sur. ..... Rig up.

RAINS COUNTY

C. H. Baylies' No. 1 Ownby, 150 ft. N and 1,100 ft. from E of most easterly SE cor. of survey, Alexander Sur. ..... S.D. 4,036 ft.; to drill deeper.

RED RIVER COUNTY

Hoffman and Henson's No. 1 H. H. Lennox, 2,790 ft. W and 300 ft. S of most easterly NE cor. of survey, J. E. Edmondson Sur. ..... S.D. 60 ft.

Concord Oil Co.'s No. 1 J. R. Dellahunty, 500 ft. from N of Isaac Moore Sur. and 200 ft. E of E line of Robert Glass Sur. ..... S.D. 2,546 ft.

L. G. Priest's No. 1 W. C. Ware, 3½ miles SE of English, 987 ft. from most southerly S line and 150 ft. from most easterly E line of 103.2-ac. tract, James Burkham Sur. ..... Derrick.

ROCKWALL COUNTY

Bucanner Oil Co.'s No. 1 H. L. Lofland, center of 69-ac. tract in W. M. Bird Sur. ..... Set 10-in. csg. 120 ft.

RUSK COUNTY

Brooks Petroleum Co.'s No. 1 Mayfield, Daniel Clark Sur. ..... Top sand 3,622 ft.; waiting on standard rig; would not flow; T.D. 3,702 ft.

Butler and Calhoun's No. 1 C. C. Lowe, 225 ft. from N line and 200 ft. from E line of 85-ac. lease, W. G. Tutt Sur. ..... Drlg. 3,342 ft.

E. O. Butler's No. 1 R. H. Gary estate, 3,960 ft. from N line and 5,280 ft. from W line of survey, 10 miles S of Henderson, A. Latham Sur. ..... Derrick.

Byrd-Frost's No. 1 Buckner, J. E. Peyton Sur. ..... T.D. 4,077 ft.; junked; will skid derrick.

Chaplin and Bass' No. 1 Pinkston, 330 ft. from S and E lines of 10-ac. lease, J. B. De Cadena Sur. ..... Drlg. 3,582 ft.

M. H. Corbin et al's No. 1 E. B. Alford, center of Blk. No. 51, T. J. Moore Sur. ..... Rig up.

J. E. Crosbie's No. 1 Homer Leach, 330 ft. from W line of lease and center of N and S lines of 51-ac. lease, J. C. Barnett Sur. ..... Bldg. derrick.

F. W. Fair et al's No. 1 J. R. Alford, center of Blk. No. 24, T. J. Moore Sur. ..... Derrick.

Gant-Gerwin and Wegener's No. 1 L. A. Till, 330 ft. from N line and 464 ft. from W and E line of 26-ac. lease and tract, M. V. Pena Sur. ..... Rigging up standard rig.

Gant and Garwin's No. 1 W. P. Moore, 330 ft. S and E of SW cor. of Arkansas, W. P. Moore 40-ac. tract, M. V. Pena Sur. ..... Location.

J. Guinn's No. 1 Neal Cooper, center of Blk. No. 36, T. J. Moore Sur. ..... Drlg. 2,590 ft.

Harris and Russell's No. 1 T. W. Harris, 330 ft. from S line and 660 ft. from W line of most southerly SW cor. of 160-ac. tract, 3 miles SW of Henderson, W. G. Davis Sur. ..... Derrick.

Hasting and Dodson's No. 1 E. B. Alford, center of Blk. No. 27, T. J. Moore Sur. ..... Derrick.

Hathaway et al's No. 1 Gray, J. M. McLain Sur. ..... Waiting on csg.; T.D. 3,519 ft.

Holden-Rodgerson et al's No. 1 Barton and Birdwell, N offset to Reisinger et al's No. 1 Barton, W. G. Tutt Sur. ..... S.D. 3,727 ft.

Hendershot et al's No. 1 Green Washington, 330 ft. from N line and 250 ft. from W line of 11.75-ac. tract, D. Clark Sur. ..... Waiting on cmt. to set.

W. F. Hollifield's No. 1 Wylie, 180 ft. from W and E line and 330 ft. from S line of 10-ac. lease, Juan Ximenes Sur. ..... T.D. 3,676 ft.

W. C. Know's No. 1 W. D. Peterson, center of 3.75-ac. tract, Jacob Lewis Sur. ..... S.D. 2,200 ft.; rig moved off.

Joe Marr Drlg. Co.'s No. 1 Tom Lacy, 350 ft. from N and W line of N 50 acres of 100-ac. tract, J. N. Sparks Sur. ..... Coring 3,695 ft.

Pace Petroleum Co.'s No. 1 Wells, W offset to East Texas, W. P. Chisum Sur. ..... Derrick.

Pansey Oil Co.'s No. 1 J. R. Glover, 250 ft. from E line and center of N and S lines of 8 acres of 16-ac. tract, J. Moore Sur. ..... Rig up.

Patterson Drilling Co.'s No. 1 W. N. Brightwell, center of 3.4-ac. tract, R. E. Winn Sur. ..... Waiting on cmt. to set 3,630 ft.

Ross Seward's No. 1 Burton, J. J. T'Barbo Sur. ..... Skidded rig; S.D. 1,500 ft.

Jay Simmon's No. 1 D. C. Joyner, 2,050 ft. from S line and 300 ft. from W line of 74.11-ac. tract, F. Cordova Sur. ..... Drlg. 703 ft.

Sabins et al's No. 1 J. R. Irion, 330 ft. from S and E line of 2-ac. tract, John Womack Sur. ..... Rig up and S.D.

Snyder et al's No. 1 H. P. Leverett, 220 ft. from S line and 167 ft. from W line of tract, J. Lindley Sur. ..... Bldg. derrick.

Spansco Oil Co.'s No. 1 A. Holt, 625 ft. from S line and 103 ft. from W line of lease, D. Clark Sur. ..... Rig up.

W. L. Stearns' No. 1 Negro Church, center of tract, Juan Ximenes Sur. ..... Drlg. 1,596 ft.

Sun Oil Co.'s No. 1 Ellen Till, 330 ft. from S line and 206 ft. from W line of 126-ac. tract, M. C. Pena Sur. ..... Drlg. 3,595 ft.

Sun Oil Co.'s No. 1 Alph Lee, 2,323 ft. from E line and center of N and S lines of 94-ac. lease, Peter Tipps Sur. ..... Rig up.

Tex Jersey Oil Co.'s No. 1 Cora Hannah, center of 6-ac. lease, J. B. De Cadena Sur. ..... Drlg. 3,357 ft.

R. H. Vice's No. 1 Neal Cooper, 315 ft. SW along NW line of Cooper tract and 141 ft. SE at right angles, T. J. Moore Sur. ..... Drlg. 1,740 ft.

Sam K. Vierson's No. 1 Will McCord, 330 ft. from S line and 180 ft. from E line of 5.48-ac. lease and tract, J. B. De Cadena Sur. ..... Drlg. 2,200 ft.

Watson and Butler's No. 1 G. W. Tipps, 330 ft. from S line and 600 ft. from W line of 18-ac. lease, H. M. Smith Sur. ..... Waiting on surface csg.

Weaver-Crim's No. 1 F. Bean, 175 ft. from NW line and 212 ft. from S line of 16-ac. lease, Mary Cogswell Sur. ..... Drlg. 3,737 ft.

Nat Wiseman's No. 1 Thrash, 177 ft. S and 87 ft. E of NW cor. of 62.6-ac. tract and 2½-ac. lease, F. Cordova Sur. ..... Derrick.

Paulett et al's No. 1 Ed Sparks, 350 ft. from E, 150 ft. from S of survey, L. C. Riggs Sur. ..... S.D. 1,465 ft.

SMITH COUNTY

Joiner et al's No. 1 C. S. Jackson ..... S.D.; swabbed dry 3,985 ft.

J. E. Lucas' No. 1 Henry Jackson, 150 ft. from N and E lines of 25-ac. tract, James Jordan Sur. ..... Set surface csg.

R. J. McMurray's No. 1 Frank Cole, 330 ft. from E line of lease and center of N and S lines of N 10.20-ac. lease, E. Daniels Sur. ..... T.D. 3,772 ft.

Manahan Drilling Co.'s No. 1 S. S. Cooke, 150 ft. from N line and 430 ft. from E line of Blk. No. 9, Juan Vargus Sur. ..... Rig up.

Pitzner and West's No. 1 L. S. Sartain, 430 ft. from S line and 300 ft. from E line of 20-ac. lease, James Jordan Sur. ..... Drlg. 3,790 ft.

Robert S. Monroe, 330 ft. from S line and center of E and W lines of 12-ac. lease, D. Shaw Sur. ..... Derrick.

Quintella McCullough's No. 1 Jessie Cole, 200 ft. from S line and center of E and W lines of 6-ac. lease, J. Jordan Sur. ..... T.D. 3,740 ft.; running csg.

Smith Oil & Gas Co.'s No. 1 S. S. Cooke, 330 ft. S and 330 ft. W of SE cor. of Sinclair Prairie's E. E. Moores lease, Juan Vargus Sur. ..... Drlg. 2,600 ft.

Sutton and Hawkins' No. 1 Church Lot, 210 ft. from S line and 180 ft. from W line of tract, James Jordan Sur. ..... Drlg. 3,160 ft.

Alph Tillman et al's No. 1 Jessie Cole, 137 ft. from E line and 375 ft. from N line of 32-ac. lease, center of 5-ac. lease, James Jordan Sur. ..... Drlg. 1,250 ft.

TITUS COUNTY

Perry V. Cook's No. 1 M. C. Rogers, center of SW of Moore Sur. ..... T.D. 4,212 ft.

UPSHUR COUNTY

Conservative Oil Co.'s No. 1 E. O'Byrne, 350 ft. from N and E lines of 20-ac. lease, D. Ferguson Sur. ..... Testing 3,739 ft.

Cranfill & Reynolds and Russ' No. 1 Williams, 330 ft. from S and E lines of lease, McKinley and Williams Sur. ..... Drlg. 2,500 ft.

Faith Oil Co.'s No. 1 E. H. Brawley, 330 ft. E and W of NE cor. of The Texas Company's J. Williams 93-ac. lease ..... Drlg. 2,650 ft.

Grover Hart's No. 1 Allen, 330 ft. from S and E lines of lease, one-half mile W of Mountain, Gonzales Sur. ..... Derrick.

Hill Kimsey's No. 1 D. F. Smith, 466 ft. from S line and 1,165 ft. from E line of 266-ac. tract, J. R. Davis Sur. ..... Moving off.

Pat Hudson et al's No. 1 D. F. Smith, 330 ft. out of SE cor. of W 100 acres of the N 200 acres of the 272-ac. lease, 3 miles E and 1½ miles N of Cranfill & Reynolds' No. 1 Rash, John Denson Sur. ..... Waiting orders 3,710 ft.

Maddox Development Co.'s No. 1 Willie Starr, 602 ft. from S line and 330 ft. from W line of 96-ac. tract, C. H. Cooper Sur. ..... Bldg. derrick.

Magnolia Petroleum Co.'s No. 1 L. Graves, 354 ft. from N line and S line and 1,017 ft. from E and W lines of lease, M. Irwin Sur. ..... Derrick.

Mannas and Snuggs' No. 1 G. C. Pool, 330 ft. from N and W lines of 55-ac. tract, S. J. Poer Sur. ..... S.D. 243 ft.

J. C. McFarland et al's No. 1 Willie Starr, center of S 40 acres of Starr 96-ac. tract, Charles Cooper Sur. ..... S.D. 3,523 ft.

Mudge Oil Co.'s No. 1 A. L. Shelton, 330 ft. from S and W lines of 3.8-ac. lease, D. Ferguson Sur. ..... Drlg. 1,450 ft.

Pitts et al's No. 1 H. Davis, center of 7.5-ac. lease, W. R. Stephens Sur. ..... Derrick.

S. D. Reynolds' No. 1 W. R. Nichols, 330 ft. from S line and center of E and W lines of N half of Miller and Reynolds lease, M. Mann Sur. ..... Set surface csg.

Sorrells and Owens' No. 1 J. W. Free, 330 ft. from S and E lines of lease, William King Sur. ..... Drlg. 2,960 ft.

J. Thomas Cox et al's No. 1 L. B. Miller, 330 ft. from S and E lines of 104.4-ac. tract ..... Location.

A. A. Trammell et al's No. 1 E. H. Hampton, 330 ft. from S and E line of S 60 acres of E 150 acres of 192-ac tract, William King Sur. ..... Top sand 3,686 ft.; S.D. 3,688 ft.

Webster's No. 1 R. H. McClelland, 1,956 ft. E and 385 ft. S of NW cor. of 751-ac. tract, M. P. Del Torres Sur. ..... Derrick.

G. L. Wickliffe et al's No. 1 M. E. Florence, center of 41.5-ac. lease, M. Chandler Sur. ..... Drlg. 3,006 ft.

VAN ZANDT COUNTY

Barton et al's No. 1 C. L. Hubbard, 600 ft. out of NE cor. of Hubbard 225-ac. tract, 3¼ miles S of Canton. M. J. DeCadena Sur. ..... S.D. 2,405 ft.

Kelly O. & G. Co.'s No. 1 Lemsford, center of Lemsford tract, John Conner Sur. ..... S.D. 2,300 ft.

Pure Oil Co.'s No. 2 N. R. Blake, 501 ft. S of N line and 225 ft. W of E line of lease, John Walling Sur. ..... Drlg. 2,100 ft.

Pure Oil Co.'s No. 3 B. W. Russell, 650 ft. W of E line of 30-ac. tract, David Rose Sur. ..... Set surface csg.

Pure Oil Co.'s No. 4 A. W. Ellison, 700 ft. S of N line and 225 ft. E of W line of lease, James Rose Sur. ..... Cmt. setting 2,890 ft

Pure Oil Co.'s No. 5 L. M. Brawner, 200 ft. S of N line and 1,572 ft. W of E line of lease, John Walling Sur. ..... Csg. cemented.

Pure Oil Co.'s No. 5 W. F. Swain, 552 ft. W of E line and 250 ft. N of S line of lease, John Walling Sur. ..... Csg. cemented.

The Texas Company's No. 6, 1,044 ft. N of S line and 59 ft. W of E line of lease, John Walling Sur. ..... Drlg. 2,600 ft.

Van Oil Association's No 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... T.D. 2,850 ft.

WOOD COUNTY

Talko Oil Co.'s No. 1 G. T. Ross, B. L. Smith Sur. ..... Drlg. 2,892 ft.

Wood County Dev. Co.'s No. 1 Davis, approximately 180 ft. from S line of 160-ac. tract and 2¼ miles S of Kantes in Sarah McDonald Sur. ..... Rig up.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 47)

ECTOR COUNTY

Thomas et al's No. 1 Edwards, 330 ft. from S, 2,310 ft. from E, Sec. 38, Blk. 43, Twp. 3s, T.&P. Sur. ..... Drlg. 1,110 ft.
H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW Sec. 16, Blk. 46, Twp. 3s, G. M. M.Br.&A. Sur. ..... Drlg. 3,580 ft.

EL PASO COUNTY

Tri-State Oil Co.'s No. 1 Bobadella, 1,325 ft. from S and E lines Sur. 354, S.P. No. 7,247 ..... S.D. 2,287 ft.

FISHER COUNTY

Condor Petroleum Co.'s No. 1 Steele, 660 ft. from S and 330 ft. from W of W half of SE Sec. 210, B.B.B.&C. Ry. Sur. ..... Drlg. 2,475 ft.
Cranfill & Reynolds' No. 1 George, 400 ft. from N and 330 ft. from E. Sec. 206, Blk. 1, B.B.B.&C. Sur. ..... T.D. 5,347 ft.; fishing.
Sinclair-Prairie's No. 2 Steele, 350 ft. from N and W of NE Sec. 72, H.T.&B. Sur. ..... S.D. 2,302 ft.; straightening crooked hole.
Southern Oil Co.'s No. 1 Purdue, 990 ft. from S and E Sec. 202, Blk. B, B.B.&C. Sur. ..... Material.

GAINES COUNTY

McElreath et al's No. 1 Sparks, 330 ft. from N and E Sec. 397, Blk. G ..... Driving csg. 200 ft.

GLASSCOCK COUNTY

Mann et al's No. 1 fee, 330 ft. from N and 1,980 ft. from E, Sec. 27, Blk. 34, Twp. 3s, T.&P. Sur. ..... S.D. 2,825 ft.
Humble Oil & Ref. Co.'s No. 3 Arrington, 1,980 ft. from W, Sec. 22, Blk. 33, Twp. 2s, T.&P. Sur. ..... T.P. 2,278 ft.; filled 1,400 ft. with oil; T.D. 2,289 ft.
Penn Oil Co. et al's No. 1 F. A. Hohenstreit, 2,310 ft. from N and E lines of Sec. 47, Blk. 36, Twp. 3s, T.&P. Sur. ..... S.D. 3,310 ft.

GARZA COUNTY

Penny & Posey's No. 1 Justice, 1,980 ft. from S and 1,650 ft. from E of Sec. 25, Blk. 6, H.&G.N. Sur. (3,500-ft. cable tool test) ..... S.D. 3,390 ft.

HOWARD COUNTY

American-Maracaibo's No. 5-A Settles, 1,836 ft. from N. 1,884 ft. from W, Sec. 6, Blk. 32, T.&P. Sur. ..... Shut down.
F. H. E. Oil Co.'s No. 1 Denman, 330 ft. from N, 2,310 ft. from E of Sec. 14, Blk. 30, T.&P. Sur. ..... T.D. 2,812 ft.; cleaning out after 400-qt. shot; T.P. 2,706 ft.
Green O. & R. Co.'s No. 1 Denman, 990 ft. from S and 2,310 ft. from W, Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur.. Spudded and S.D.
Harrison's No. 2 Denman, 1,650 ft. from S and 355 ft. from E Sec. 10, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 2,800 ft.; T.P. 2,530 ft.; swabbed 24 bbls. in 4½ hrs.
Myers et al's No. 1 Denman, 2,305 ft. from S and 2,320 ft. from E Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. ..... S.D. 1,030 ft.
Pure Oil Co.'s No. 12 Chalk, 1,650 ft. from N and E, Sec. 126, Blk. 29, W.&N.W. Sur. ..... Drlg. 940 ft.
Schermerhorn Oil Co.'s No. 5 Kloh, 660 ft. from S and W of Sec. 13, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 1,350 ft.
Sinclair-Prairie Oil Co.'s No. 2 Dodge, 2,313 ft. from S and 300 ft. from W, Sec. 11, Blk. 34, Twp. 1s, T.&P. Sur. ..... Drlg. 1,375 ft.
Wallace et al's No. 1 Belt, 1,960 ft. from N, 1,640 ft. from W, Sec. 13, Blk. 30-1s, T.&P. Sur. ..... T.P. 2,480 ft.; T.D. 2,855 ft.; rebuilding rig; hole bridged.

IRION COUNTY

Apollo Oil Co.'s No. 4 Nutt, 504 ft. from N and 1,562 ft. from W of Subd. No. 6, Gonzales County School Land ..... Machine.
Davis et al's No. 1 Suggs, 1,540 ft. from S and 925 ft. from W, Sec. 3,051, Blk. 28, H.&T.C. Sur. ..... Drlg. by tools 7,535 ft.
Johnson's No. 1 Tankersley, 1,340 ft. from S and 150 ft. from E, Sec. 736, F. Sockstedt Sur. ..... S.D. 1,350 ft.
Stanolind Oil & Gas Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ..... S.D. 7,420 ft.

JONES COUNTY

Abers et al's No. 1 Burton, 150 ft. from S and 175 ft. from E of 43.4-acre tract in G. Martinez Sur. ..... S.D. 1,005 ft.; temp. abnd.
Johnson's No. 1 Huddleston, 165 ft. from S and W of N half of Sec. 39, Blk. 14, T.&P. Sur. ..... Spudded and S.D.
J. M. Johnson's No. 1 Swann, 6,150 ft. from S and 1,650 ft. from E, I. Miley Sur. ..... Drlg. 815 ft.
Robert Oil Co.'s No. 1 Swann, 2,350 ft. from W and 2,320 ft. from S, I. Miley Sur. ..... Rig.
Smart & Reynolds' No. 1 Reynolds, 2,500 ft. from N and 150 ft. from W, Sec. 2, W. T. Scott Sur. No. 3.. Drlg. 175 ft.
Southern Oil Co.'s No. 1 Sears, 300 ft. from S and W J. H. Grayson Sur. ..... Rig.
C. S. Spelling et al's No. 1 Lillie, 200 ft. from N and W Sec. 4, E. Miller Sur. No. 2 ..... Drlg. 1,650 ft.
Transcontinental Prod. Co.'s No. 1 Rust, 5,280 ft. N and 995 ft. W of SE cor. J. J. Hughes Sur. 556 ..... Spudded.
Young et al's No. 1 Harrell, 150 ft. from S and E of N half of Sec. 8, O.A.L. Sur. ..... Location.

LOVING COUNTY

Eppenauer's No. 1 Freels, 1,368 ft. from NE, 410 ft. from NW, Sec. 92, Blk. 1, W.&N.W. Sur. ..... Drlg. 2,925 ft.
Covey et al's No. 1 Wheat, 2,310 ft. from SW, 330 ft. from SE, Sec. 3, Blk. 2, W.&N.W. Sur. ..... S.D. 1,300 ft.
Eppenauer Drlg. Co.'s No. 1 Allen, 465 ft. from NE and SE, Sec. 4, Blk. 3, W.&N.W. Sur. ..... Drlg. 3,205 ft.
Ervin & Mahres' No. 1 Thrope, 2,310 ft. from E and 330 ft. from S, Sec. 46, Blk. 53, T.&P. Sur. ..... S.D. 810 ft.
Fair Lawn Syndicate's No. 1 Brookfield, 330 ft. from N and W, Sec. 30, Blk. 23, P.S.L. ..... Drlg. 500 ft.
Falbre & Evans' No. 1 Dean, 330 ft. from NE and 990 ft. from NW, Sec. 79, Blk. 33, H.&T.C. Sur. ..... Cleaning out 4,275 ft.
Goldman et al's No. 1 Allen, 330 ft. from NE and NW of Sec. 90, Blk. 1, W.&N.W. Sur. ..... Rigging up.
Lewis & Slagel's No. 1 Johnson, 330 ft. from N and 1,650 ft. from W, Sec. 4, Blk. 56, Twp. 1, T.&P. Sur.. S.D. 2,340 ft.
Martin's No. 1 Freels, 2,514 ft. from NE and 412 ft. from NW of Sec. 92, Blk. 1, W.&N.W. Sur. ..... T.D. 4,051 ft.; setting csg.
Martin et al's No. 1 Wheat, 990 ft. from SW and SE, Sec. 83, Blk. 1, W.&N.W. Sur. ..... Location.
Miller et al's No. 1 Ferguson, 990 ft. from N and E of Sec. 44, Blk. 29 ..... S.D.
Tennant et al's No. 1 Martin, 990 ft. from NW and SW, Sec. 66, Blk. 1, W.&N.W. Sur. ..... T.D. 4,333 ft.; shot 110 qts. 4,345-55 ft.; cleaning out.
Thomas' No. 1 Wheat, 2,310 ft. from NW, 990 ft. from NE, Sec. 85, Blk. 1, W.&N.W. Sur. ..... Drlg. 3,250 ft.

MENARD COUNTY

Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor., Sec. 132, E.L.R.R. Sur. ..... S.D. 2,860 ft.

PECOS COUNTY

Anderson's No. 1 Lee Fever, 330 ft. from N and W of Sec. 73, Blk. 8, H.&G.N. Sur. ..... S.D. 2,687 ft.
Corvette Oil Corp.'s No. 8 H. Monroe, 1,040 ft. from E line and 150 ft. from N line of Sec. 39, G.C.&S.F. Sur., Blk. 194 ..... Location.
Culberson Bros.' No. 3-B Monroe, 700 ft. from N and 700 ft. from E. Sec. 39, Blk. 194, G.C.&S.F. Sur. .... Drlg. 480 ft.; show oil 450 ft.
Gulf Prod. Co.'s No. 34 Yates, 13,415 ft. from W and 330 ft. from S of Runnells County School Land .... T.D. 1,258 ft.; T.P. 1,123 ft.; flowing.
Hampton et al's No. 1 Byrne, 1,980 ft. from NW and 1,560 ft. from NE, Sec. 54, Blk. 10, H.&G.N. Sur. ... T.D. 1,395 ft.; T.P. 1,358 ft.; S.D. for tubing.
Dittman's No. 1 Sanford, 330 ft. from NW and 1,650 ft. from NE of Sec. 55, Blk. 16, H.&G.N. Sur. ..... S.D. 1,454 ft.; to plug.

PRESIDIO COUNTY

Sadler et al's No. 1 Bledsoe, 2,640 ft. from N and W Sec. 15, Blk. 354, G.C.&S.F. Sur. ..... S.D. 328 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 6-C University, 1,370 ft. fro mS and 1,000 ft. from E, Sec. 12, Blk. 3 ..... Fishing 8,367 ft.
Big Lake Oil Co.'s No. 7-C University, 1,670 ft. from W and 725 ft. from S, Sec. 35, Blk. 9 ..... Drlg. 3,645 ft.
Group Oil Corp.'s No. 5-B University, 2,700 ft. from S and 1,775 ft. from W, Sec. 36, Blk. 9 ..... Drlg. 1,275 ft.

REEVES COUNTY

F. McDorman et al's No. 1 Ray Roberts et al, 2,310 ft. from S and E lines of Sec. 22, Blk. 59, P.S.L. Sur. ... S.D. 390 ft.
Southern Star Oil Co.'s No. 1 Wright, 1,320 ft. from S and W, Sec. 58, Cassel's Sur. ..... S.D. 75 ft.
Lee O. White et al's No. 1 Hersherser, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur... S.D. 5,044 ft.

RUNNELS COUNTY

Blue Bonnett Oil Co.'s No. 1 McMillan, 1,363 ft. from N and 660 ft. from W, Sec. 22, N. Travis Sur. ..... S.D. 1,850 ft.
Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 519 ..... S.O. 3,417-20 ft.; S.D. 3,600 ft.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 39, Blk. M, G.H.&S.A. Sur. ..... S.D. 5,410 ft.; moving in new engine.
Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,302 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... S.D. 5,580 ft.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,320 ft. from N, 1,670 ft. from W, G.H.&S.A. Sur. ..... S.D. 5,053 ft.

SCURRY COUNTY

G. E. Dickman et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 375, Blk. 2, E.&T.C. Sub. ..... S.D. 5,050 ft.
W. S. Guthrie's No. 1 Snyder National Bank, 330 ft. from N and 2,310 ft. from E of Sec. 115, Blk. 97, H.&T.C. Sur. ..... Location.
Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W, Sec. 63, Blk. 3, H.&G.N. Sur. ..... Spudded and S.D.
Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 153, Blk. 97, H.&T.C. Sur. ..... S.D. 4,779 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T. Sur. ..... S.D. 2,369 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 4, Georgetown Ry. Sur. ..... S.D. 3,150 ft.; moved off tools.
Miller Bros.' No. 1 Allison & Burke, C NW Sec. 10, Blk. 176, T.&P. Sur. ..... S.D. 130 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F. Sur.. S.D. 6,120 ft.
Jones et al's No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. ..... S.D. 2,545 ft.
Sides et al's No. 1 Phelps, 2,157 ft. from N and 2,462 ft. from W, Sec. 5, G. W. Hurley Sur. ..... S.D. 1,435 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Norsworthy, 1,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... S.D. 760 ft.; S.O. and gas 725 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 130, Dist. No. 11, S.P. Sur.... S.D. 1,994 ft.
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Sur. No. 2 ..... S.D. 200 ft.

UPTON COUNTY

Farley et al's No. 1-B Lone, 2,310 ft. from N and E, Sec. 36, Blk. 1, M.-K.-T. Sur. ..... T.P. 2,182 ft.; T.D. 2,308 ft.; to test.

VAL VERDE COUNTY

Couch et al's No. 1 J. P. Yoas, 1,300 ft. from the N line and E line of Sec. 31, Blk. 1 ,I.&G.N. Sur. .... S. D. 220 ft.
Independent Operators' No. 1 Whitehead, SE SE Sec. 10, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... S.D. 5,360 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev 2,130 ft. ..... S.D. 6,750 ft.

WARD COUNTY

Abell Bros. et al's No. 1 Smith, 330 ft. from NE and NW, Sec. 4, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,225 ft.
Abell Bros.' No. 2 Smith, 2,310 ft. from SE and 2,020 ft. from NE, Sec. 4, Blk. 34, H.&T.C. Sur. ..... Cellar.
Abell Bros.' No. 3 Smith, 2,310 ft. from NE and NW, Sec. 4 ..... Location.
Bradford & Bentley's No. 1 B. Carson, 1,650 ft. from the NE line and 990 ft. from the SE line of Sec. 26, H.&T.C. Sur., Blk. ..... T.D. 860 ft.
Eastland Oil Co.'s No. 1 Weiss, 2,265 ft. from SE and SW, Sec. 4, Blk. 34, H.&T.C. Sur. ..... T.D. 2,361 ft.; flowing 18 bbls. per hr.; to deepen.
Eastland Oil Co.'s No. 2 Weiss, 1,728 ft. from SW and 2,265 ft. from SE, Sec. 4, Blk. 34, E.&T.C. Sur. ..... Location.
Eppenauer's No. 1 Purcell, 265 ft. from SW and 1,650 ft. from SE of Sec. 17, Blk. 14, H.&T.C. Sur. ..... T.D. 2,740 ft.
Eppenauer Drlg. Co.'s No. 1 Townsend-Moore, 990 ft. from SE and 330 ft. from SW, Sec. 17, Blk. 34, H.&T.C. Sur. ..... Spudded and S.D.
H. V. Greer's No. 1 Carr, 150 ft. from NW and 510 ft. from SW, Sec. 13, Blk. 5, H.&T.C. Sur. ..... S.D. 2,145 ft.
Gulf Prod. Co.'s No. 11 Hutchings, 330 ft. from N and 990 ft. from W of 370 acres in S half Sec. 5, Blk. F .. Drlg. 1,390 ft.
Gulf Production Co.'s No. 22 O'Brien, 1,100 ft. from N and 330 ft. from E, Sec. 16, Blk. F, G.M.M.B.&A. Sur. ..... Location.
Leydecker et al's No. 1 Bennett, 2,310 ft. from NW and NE, Sec. 16, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,250 ft.
Massie et al's No. 1 Stewart, 330 ft. from SW and SE, Sec. 12, Blk. 14, H.&T.C. Cur. ..... Drlg. 2,455 ft.; show oil 2,424 ft.
Moran & Burkhart's No. 2 J. T. Sweatt et al, 3,310 ft. from SW, Sec. 1, J. Howe Sur. ..... Drlg. 1,970 ft.
Moran & Miles' No. 1 Boogher, 3,603 ft. from NE and 1,303 ft. from SE, Sec. 11, Blk. 5, H.&T.C. Sur. ..... T.P. 2,192 ft.; T.D. 2,322 ft.; running tubing.
R. F. Owen's No. 1 Lee, 1,344 ft. from NW and 4,532 ft. from SW, Sec. 1, J. Howe Sur. ..... Drlg. 1,760 ft.
Plains Prod. Co.' and Simms Oil Co.'s No. 1 Benton Land Co., 440 ft. from the SE and 440 ft. from SW lines of Sec. 36, W.&N.W.R.R. Sur., Blk. 1 ..... Drlg. 1,360 ft.
Rector Oil Co.'s No. 1 Smith, 1,320 ft. from N and E, Sec. 22, Blk. A, G.M.M.B.&A. Sur. ..... S.D. 2,602 ft.
Renaud-Prettyman's No. 1 University, 330 ft. from N and E Sec. 4, Blk. 16 ..... S.D. 400 ft.
Richardson et al's No. 8 O'Brien, 1,372 ft. from N, 330 ft. from W, Sec. 5, Blk. F ..... T.D. 2,765 ft.; shot 170 qts.; cleaning out.
Richardson et al's No. 9 O'Brien, 1,112 ft. from N and 990 ft. from W Sec. 5, Blk. F ..... T.D. 2,400 ft.; running casing; 1,000 ft. oil in hole.
Rixford et al's No. 1 Green, 330 ft. from NW and SW Sec. 4, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,400 ft.
Sturm-Simms Oil & Gas Co.'s No. 2 Jones, 1,650 ft. from NE and 330 ft. from SE, Sec. 25, Blk. B-29, P.S.L... Drlg. 1,210 ft.
Thomas et al's No. 1 Bennett, 2,310 ft. from NE and SE, Sec. 16, Blk. 34, E.&T.C. Sur. ..... Drlg. 450 ft.
White et al's No. 1 Burtner, 150 ft. from NE and 515 ft. from SE of Sec. 8, Blk. 32, H.&T.C. Sur. ..... S.D. 755 ft.

WINKLER COUNTY

Adams et al's No. 1 Scarborough, 660 ft. from N and E Sec. 1, Blk. 77, P.S.L. ..... Drlg. 2,750 ft.

Oklahoma Output Below 400,000 Barrels

Decline in Demand Causes Further Curtailment of Production. Martial Law Resumed by Order of Governor Murray

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Due to the end of the month period in taking allowables Oklahoma daily average production declined for the week ending May 28, approximately 32,000 bbls. compared to the previous week. The production was estimated at 398,600 bbls. a day.

Lightning ignited a well in the Oklahoma City Field forcing considerable work to be shut down for a few hours. Coline Oil Co.'s No. 16 Clauer, SE cor. NW SE Section 26-11-3w, was on fire. Lightning fired a treating tank while the well was on production and the tank exploded carrying the flaming oil to nearby wells, endangering equipment before being brought under control. Field operations were increased in the Oklahoma City Field by five new locations during the week and work was resumed at three wells which have been idle to take their 58-day shutdown proration time. The total number of operations in the field is now 149.

In the other areas in the State, only routine developments are reported from the Greater Seminole area. Several new operations are starting around the new wildcat well in western Osage County. The second well in the county line pool, in Lincoln County, just west of the Creek County line reports a showing of oil in the Wilcox sand, and the third gas well was preparing to drill deeper in search of oil. In southern Oklahoma the Tatums Pool, in Carter County, is becoming more active. Three tests are drilling which may extend the producing area.

Pipe Line Nominations

Pipe line companies purchasing crude oil in the Oklahoma City Field nominated approximately 97,300 bbls. of oil a day from that field in June. This is an 8,000-bbl. a day reduction compared to the previous month by the same companies nominated during the month of May. Purchasers nominated 97,300 bbls. a day compared to 105,821 bbls. for May.

At the hearing held in Oklahoma City May 28, the Corporation Commission fixed the daily allowables on the nomination figures. The allowable was divided as follows: A flat production of 2,000 bbls. a day was allowed to wells in the line zone; water wells were allowed 10,200 bbls. a day; new wells were estimated at 4,316 bbls., and a 25-bbl. a day exemption to all wells outside the lime zone was figured at 18,275 bbls For the remainder of the daily allowable, the percentage was fixed at 1.75 of the potential, or 63,575 bbls. daily.

Nominations for the month and the actual pipe line shipments for the first 25 days of May were nearly balanced, the nominations totaling 105,821 bbls. and the pipe line shipments 105,680 bbls. for the first 25 days. The following table shows the nominations for May and June by companies:

Company—	May nominations	June nominations
Champlin	2,141	2,000
Continental	2,000	2,000
Empire	30,000	15,000
Globe	8,000	7,000
Magnolia	6,500	6,500
Oklahoma	24,000	22,000
Sunray	....	....
Shell	2,500	2,500
Sinclair	7,500	7,500
Stanolind	18,000	17,000
Tidal	200	700
Anderson-Prichard	....	100
Canadian	500	500
Capitol P. & R.	80	150
Century	1,100	2,500
I. T. I. O.	7,000	5,000
Peacock	300	450
Petroleum	1,500	1,500
Independent	2,500	2,500
White Oak	1,500	1,500
Major	....	400
Sterling	500	500
Singleton	....	....
Cement Ref.	....	....
Total	105,821	97,300

Umpire's Figures

The Corporation Commission fixed June 28 for the next hearing to determine the demand for crude oil for July. At the same time the statewide proration hearing will be held. Ray M. Collins, state umpire, said that the Greater Seminole area has been shipping approximately 130,000 bbls. a day and that earlier in the year the average was 135,000 bbls. a day. The potential production of the Greater Seminole area was estimated at 390,000 bbls. a day and the potential of the Oklahoma City Field was estimated at 3,641,000 bbls. daily under the adjusted method, by the umpire.

The estimated current underproduction for the month of May in the Oklahoma City Field is expected to reach 177,473 bbls. The umpire also estimated the May production would reach 3,283,287 bbls. and the pipe line shipments would be 3,256,209 bbls., while the daily allowable for May was 3,460,760 bbls.

The stocks of oil on leases in the Oklahoma City Field totaled 611,293 bbls. on May 1 and will be increased to approximately 638,371 bbls. on June 1, it was estimated by the umpire's office. This quantity of stocks is not considered excessive, as it is believed to be below the estimated needs for tank bottoms.

On May 25 there were 731 oil wells in the Oklahoma City Field, even with proration schedules, with an adjusted potential of 3,576,693 bbls. in one day. Production from the Siliceous lime zone averaged 2,209 bbls. for the first 25 days of May. There were 101 wells in the field making 3 per cent or more water. Another extension of 30 days was granted to the group of 23 wells now underproduced and classed as unable to make their allowables. Only nine wells of the 23 were allowed by the commission to have until July 1 to recondition and get even with their schedules. The wells allowed to recondition are Anderson-Prichard Petroleum Corp.'s No. 1 Graham and No. 1 Orphanage, Wirt Franklin Petroleum Corp.'s No. 1 Theimer, Indian Territory Illuminating Oil Co.'s No. 4 Ferndale, No. 4 Spillman and Nos. 3, 6 and 7 Trosper and others, and Scott & Co.'s No. 1 Ashby. Action on the other wells included in the original list will not be taken until some time after June 1, at which time the present exemption expires.

The Wilcox Hearing

Hearings of the petition for the revocation of the orders issued on April 6 and 8 by the Oklahoma Corporation Commission, asked by the Wilcox Oil & Gas Co. and Tidal Oil Co. and the Frisco railway, will be heard June 6 at Oklahoma City.

Martial Law Again Applied

Governor Murray issued an executive order May 26, declaring martial law in the flush fields of Oklahoma, voiding the order of Acting Governor Burns lifting the military rule. The martial law orders affect approximately 3,105 oil wells in the State.

Governor Murray reinstated the old order when he returned to the State and was told that the Wilcox Oil & Gas Co. had filed suit in the state supreme court for a writ of prohibition to prevent the Corporation Commission from controlling production of its wells in the Oklahoma City Field. The first order declaring martial law was issued August 4, 1931.

The Wilcox Case

In the suit filed by Wilcox Oil & Gas Co. in the state supreme court, the policies of the Oklahoma Corporation Commission were assailed in enforcing proration through a state umpire paid by private companies. The company alleged that while it was cited for contempt for failure to make reports of its oil shipments and production, it is impossible to file the report without admitting violation of some order of the commission. It charged the commission was attempting to deprive the company of its constitutional rights in requiring the report to substantiate charges upon which it was about to be punished.

The suit challenged the right of the commission to assess fines for contempt, thereby questioning the enforcement provision left out of the proration law.

The company also states in the suit that under the constitution, the commission is delegated to duties of regulating transportation, transmission and public service corporations and it was beyond the power of the legislature to vest in the Corporation Commission the duty of regulating and controlling the production of oil and gas.

In referring to the umpire system now in use in the State, the petition alleges favoritism is shown to the T. B. Slick estate, the Indian Territory Illuminating Oil Co., Anderson-Prichard Petroleum Corp. and Wirt Franklin Petroleum Corp. in the Oklahoma City Field which companies the petition alleges, contribute to the salary of the umpire.

Oklahoma City's New Wells

Phillips Petroleum Co.'s No. 1 Nellie, SW cor. SE NE Section 3-11-3w, in the Oklahoma City Field, flowed 919 bbls. of oil the first hour and 6,536 bbls. in 5 hours and 42 minutes. The total depth of the well is 6,328 feet, and the 6-inch casing was landed at 6,250 feet.

The derrick at Pandem Oil Co.'s No. 1 Orphanage, NW cor. NE SE Section 17-12-4w, a wildcat test several miles northwest of production in the Oklahoma City Field, has been razed and all the equipment moved out. The test was drilled to a total depth of 6,700 feet, where water was found. It was completed in January, 1930.

Jacobs Oil Co.'s No. 1 Sinopoula, SW cor. NE SE Section 34-12-3w, was completed and flowed into the slush pits and was then shut in without gauging. The total depth of the well is 6,365 feet.

Phillips Petroleum Co.'s No. 1 Garver, SE cor. NE NW NE Section 22-11-3w, made 210 bbls. of oil in four hours from the Wilcox sand at 6,483-6,510 feet. This is one of the smallest wells yet completed in that part of the field, and at the same rate would have a potential of 1,260 bbls. a day.

In Greater Seminole

Sunbeam Oil Co.'s No. 1 Campbell, NW cor. SE, Section 20-9-6, southeast of the Earlsboro Field in Pottawatomie County, is landing casing to test a showing of oil found in the Calvin sand at 2,685 feet. The test will be standardized before drilling into the pay horizon. The test is located on a 40-acre tract and is the company's first operation in the Greater Seminole area.

In the Conservation Pool in Pontotoc County a new shallow sand was found during the week opening a new producing horizon. Bowles & Smith's No. 1 Miller, NW cor. NE SW, Section 27-5-6, found a sand at 1,480-83 feet, where the oil rose 200 feet in the hole in a short time. The casing will be lowered to the top of the sand and a production test made.

Edna Marie Oil Co. and others' No. 1 Constance, SE cor. NE NE, Sectioin 20-5-6, in the Conservation Pool, found a showing of oil in sand at 1,641-45 feet and was drilled deeper to 1,825 feet and after a production test it was found to be dry.

Revives Osage County

The gusher recentiy completed in Osage County indicates that the Osage Nation is far from being drilled up as an oil producing area. The lack of pipe line facilities and lease tankage has delayed a potential test of the well. Producers & Refiners Corp. and Peters Petroleum Co.'s No. 1 in the SE cor. NW NE, Section 24-24-7, near the Naval Reserve in the southwestern part of the county, found the oil in the Silicious lime at 2,768-92 feet. It gauged as high as 168 bbls. an hour and made 1,200 bbls. in five hours. It has been pinched to 27 bbls. an hour. This keeps all the available tankage full and a 2-inch pipe line running to capacity. The Sinclair Prairie Pipe Line Co. is constructing a 3-inch pipe line to the well and upon its completion the well will be permitted to flow its potential production.

The second test in the area is the Lewis Production Co.'s No. 1 in the NE cor. SW, Section 28-24-7, west of the gusher well. The company may make a Bartlesville or Burgess sand test, and may drill it to the Silicious lime. This tract was purchased at the 1931 sale and the well is expected to prove the worth of two other unsold tracts to the north of the test at a future Osage Indian lease sale.

Another test starting in the vicinity of the new well is Champlin Refining Co.'s No. 1 in the NE cor. SE, Section 24-24-7, which is located more than a quarter of a mile southeast of the discovery well. If this test finds production it will force three other offsets, one to the north in SE cor. NE on the same lease with the discovery well, and will require the Indian Territory Illuminating Oil Co. to drill in the NE cor. SW, Section 19-24-7, and Peters Petroleum Corp. in the SW cor. NW, Section 19-24-7. Several quarter sections in the vicinity of the new well are unsold.

St. Louis Extension

The third test in the new extension area to the St. Louis Pool, in Pottawatomie County, to find a showing of oil and gas is the Pure Oil Co.'s No. 1 Tucker, SE cor., Section 34-7-4. A showing of oil and gas was found in the Hunton lime when the cement plug was drilled at 3,959 feet. The total depth of the test is 4,155 feet in Viola lime.

Amerada Petroleum Corp.'s No. 1 Mitchell, NE cor., Section 3-6-4, swabbed 100 bbls. of oil in nine hours from the Hunton lime at 3,950-4,029 feet. The 6-inch casing will be landed on bottom and the oil produced through a bradenhead, and the well drilled deeper to the Simpson sand, from which the discovery well is producing.

Will Drill in Far West

Algiers Oil Co.'s No. 1 in the C SE NE Section 21-20-24w, Ellis County, is a wildcat location staked during the week. It is located on a block of approximately 20,000 acres and the test is expected to be drilled to the Wilcox sand, or to 6,500 feet. The location is only a few miles east of the Oklahoma-Texas state line and is many miles from production. The nearest production in Oklahoma is believed to be in the Sayre Field, Beckham County. The test will be the only active operation in the extreme western part of the State.

Southern Oklahoma operations are mostly confined to the areas near production and in districts where shallow production is found. In the Healdton

WHAT USERS SAY-No. 4

"Are well pleased—
We have had no trouble
of any kind and have,
with minimum effort,
succeeded in accurately
checking all the wells
we have drilled"

SAFE
ACCURATE

SPEEDY
INEXPENSIVE

SPERRY-SUN WELL SURVEYING COMPANY
1608 WALNUT STREET, PHILADELPHIA, PA.

DALLAS, TEXAS
1501 Caruth Street

TYLER, TEXAS
Bell Building
209 N. College Street

LOS ANGELES, CALIF.
415 Petroleum Securities Bldg.

TULSA, OKLA.
402 Petroleum Bldg.

HOUSTON, TEXAS
1417 Esperson Bldg.

SYFO Clinograph

THE INK BOTTLE

Field of Carter County, some wells have been recently drilled with what is considered fair success. One of the tests in the south end of the field, Schermerhorn and others' No. 1 Cox, NW cor. NE SE Section 23-4s-3w, is averaging 50 bbls. a day from pay at 1,108-58 feet. Same company's No. 3 Richards, NW cor. SW SE Section 23-4s-2w, was completed for 6 bbls. on the pump from sand at 1,252-1,312 feet. These producers indicate that the south end of the field has future possibilities for development when conditions warrant.

On the edge of production in the Duncan Field in Stephens County, B. F. Lundy and others' No. 1 in the SE cor. SW Section 18-1s-8w, is a new location. Same operators have abandoned their test, the No. 1 Spraggins, NE cor. SW Section 8-1s-8w, at 3,280 feet. It was a mile and a half northeast of production in the area.

The Tatums Pool in northern Carter County has been dormant for several months due to the lack of a market demand for this crude. This field several months ago had a potential of 59,175 bbls. a day and since that time there has been little change in the status of the field. The allowable pipe line outlet is 6,000 bbls. a day. The field is the only one in southern Oklahoma that is under proration and it is one of the smallest of the prorated pools, covering only two sections at this time. Two tests were starting in the extension area of the Tatums Field. P. Robb and others' No. 1 Burton, NE cor. SW Section 31-1s-2w, was spudding. The location is near the Carter Oil Co.'s No. 1 Lynn, which extended the production in the field 2 miles east. On the east side of the field, Colvin, Ratliff and others' No. 1 Taylor, C S half NW SW Section 19-1s-2w, was spudding.

Beckham County

Allenam & Ramsey's No. 1 Marcum, C SW SW, Section 22-9-23w, is spudding.

Carter County

Russell and others' No. 1 Ratliff, NW cor. NE NW SW, Section 19-1s-2w, is spudding.

Cotton County

Wilson and Kennette,'s No. 1 Wilson, SW cor. NW NW, Section 6-2s-9w, is spudding.

Creek County

Taylor and others' No. 1 Green, CNL S half SE, Section 28-19-8, is a rig on the ground. H. Willibey and others' No. 1 Davidson, CWL SE NW, Section 31-19-8, is a rig on the ground. Tulsa Oil Co.'s No. 2 Purcell, NW cor. NE, Section 22-19-9, is a rig. Windsor and others' No. 1 Hinton, SE cor. NW, Section 25-19-8, is spudding. Bryan Petroleum Co.'s No. 1 McLain, NE cor. NW, Section 22-19-9, is spudding. Gled Oil Co.'s No. 3 Hamilton, SW cor. NW NE, Section 20-19-9, is a rig. Same company's No. 1 Boyd, NE cor. NW, Section 29-19-9, made 90 bbls. of oil after a 180-quart shot at 2,139-79 feet. J. E. Wallace and others' No. 1 Lewis, Section 22-19-9, made 15 bbls. of oil after a 140-quart shot at 2,167-95 feet, with the total depth 2,401 feet. Swift and others' No. 2 Nichols, NE cor. SW, Section 1-18-8, made 181 bbls. after a 90-quart shot from 2,-394-2,423 feet, in 19 hours. Oklahoma Power & Water Co.'s No. 13 Atkins, SE cor. NE SW NW, Section 4-18-7, was abandoned at 3,811 feet. R. F. Moore and others' No. 1 Gilliam, NE cor. SW NW, Section 17-17-8, was completed for 72 bbls. from sand at 2,815-39 feet, after a 160-quart shot. Billingsley and others' No. 7 Wayman, SW NW NW, Section 22-15-8, was shot with 30 quarts and made 250 bbls. a day from sand at 2,-825-38 feet. Sherry, Murta and Carter's No. 6 Wilson, SW cor. NE NW, Section 32-17-12, made 150 bbls. from sand at 2,398-2,408 feet.

Garvin County

Minick and others' No. 1 Derdeyn, NE cor. NW, Section 20-1-3w, was drilling at 600 feet.

Hughes County

Nash and Redwine's No. 3 Robinson, C SE SW, Section 15-5-11, made 2,000,-000 feet of gas from 1,257-64 feet.

Jefferson County

Monarch Petroleum Co.'s No. 1 Briggs, SW cor., Section 36-3s-4w, was abandoned at 4,583 feet.

Logan County

Amerada Petroleum Corp.'s No. 1 Penny, SW cor. NW SE, Section 25-19-4w, is spudding.

Muskogee County

P. Boyle's No. 1 Barnett, NW cor. SW NE, Section 35-16-15, is spudding. Babcock Brothers' No. 7 Barnett, C SW NE, Section 8-15-15, was completed for 4 bbls. a day from the Wilcox sand at 1,601-40 feet.

Marshall County

Reba Neff Oil Co.'s No. 1 Capes, NW cor., Section 5-8s-6, is a rig. Collins and others' No. 1 Lewis, SE cor. NE SE NE, Section 4-7s-6, is a rig. Green and others' No. 1 McDuffee, SW cor. SE SW NE, Section 3-7s-6, is spudding.

Osage County

Galt Brown's No. 3, SW cor. SE SW, Section 6-24-8, made 100 bbls. of oil from 2,335-49 feet, after an 80-quart shot.

Okmulgee County

A. E. Basinger's No. 1 McAdore, SW cor. NW NW, Section 32-14-12, was abandoned at a total depth of 3,050 feet, dry.

Okfuskee County

Steckoll and others' No. 3 Likowski, CSL N half NE SW, Section 23-11-11, is a rig. Misener and Flemming's No. 2 Robinson, CWL NW NW, Section 12-10-11, made 8 bbls. of oil from 1,606-22 feet after a 60-quart shot.

Oklahoma County

Phillips Petroleum Co.'s No. 1 Ownby, NW cor. SE, Section 22-11-3w, is a rig. Russell Petroleum Co.'s No. 1 Russell, NW cor. SW NE, Section 22-11-3w, is a rig. Brown and others' No. 1 Souter, NW cor., Section 35-11-3w, is a cellar. Phillips Petroleum Co.'s No. 1 Berg, NE cor. SW, Section 26-11-3w, made 205 bbls. of oil in two hours from the sand at 6,562-87 feet. Indian Territory Illuminating Oil Co.'s No. 1 G. Lord, SE cor. NE NE, Section 35-11-3w, flowed 2,683 bbls. of oil in eight hours from the Wilcox sand at 6,552-6,620 feet. Grison Oil Co.'s No. 1 Turner, SW cor. NW SE, Section 34-12-3w, flowed 12,840 bbls. of oil in 3 hours and 10 minutes, from Wilcox sand at 6,350-6,530 feet. Capitol P. & R. Co.'s No. 1 Hill, SE cor. NE SE, Section 4-11-3w, made 162 bbls. of oil in four hours from Wilcox sand at 6,527-30 feet. Phillips Petroleum Co.'s No. 1 Carney, NW cor. NE, Section 22-11-3w, flowed 410 bbls. of oil in five hours from Wilcox sand at 6,497-6,549 feet.

Pontotoc County

Edna Marie Oil Co. and others' No. 1 Constance, SE cor. NE NE, Section 20-5-6, was abandoned at 1,875 feet.

Pawnee County

Krasne Drilling Co.'s No. 2 Mitchell, SE cor. NW SE, Section 27-20-9, is a location. Hays and others' No. 8 Copeland, NW cor. SW SW, Section 26-20-9, was completed for 7 bbls. of oil from sand at 2,055-95 feet. Van Hess and others' No. 1 Lashley, SE cor. NW SW, Section 27-20-9, was abandoned at 2,286 feet.

Pottawatomie County

Mid-Continent Petroleum Corp.'s No. 4 Archer, SE cor., Section 14-6-3, is a rig. Gypsy Oil Co.'s No. 6 Horn, NE cor., Section 23-6-3, is a rig. Papoose Oil Co.'s No. 1 Horn, NW cor., Section 24-6-3, is a rig.

Seminole County

Fhelgar and others' No. 1 Janway, SE cor. NW SE, Section 33-9-5, is a rig. Spears Drilling Co.'s No. 1 Phillips, NE cor. SE SW, Section 17-9-6, is a rig. Taylor and Sears' No. 1 Emery, NE cor. SW, Section 28-7-8, is a rig. Malernee and others' No. 1 Tucker, NW cor. SW NW, Section 32-6-6, is a rig. Minnehoma Oil Co.'s No. 3 Noe, NW cor., Section 17-9-6, made 90 bbls. of oil and 90 bbls. of water from the Calvin sand at 2,776-92 feet.

Stephens County

Western Oil Co.'s No. 1 B. Palmer, NW cor. NE SE, Section 31-1s-8w, is a rig. Stogener and others' No. 1 Peck, SW cor. NW, Section 1-2s-8w, is spudding.

Tulsa County

A. D. McDonald's No. 2 Wolf, CEL SW NE, Section 24-16-13, is spudding.

WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location— Remarks:

Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w ..... S.D. 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w.. S.D. 5,503 ft.

BECKHAM COUNTY

Pattel Royalty's No. 1 Goose Tree, SW SE SW SE Sec. 12-10-23w ..... Rig.
Price-McFann's No. 1 Webster, C SW SW Sec. 34-8-26w.. T.D. 2,344 ft.; plugged back to 1,890-1,900 ft.; 1,500,000 ft. gas.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w.. Waiting on cmt. to set 430 ft.
Mid-Texas Co.'s No. 1 Sidell, NE cor. SW SW Sec. 17-32-22w ..... S.D. 2,550 ft.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w ..... S.D. 3,575 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w ..... S.D. 5,115 ft.

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w ..... S.D. 1,115 ft.

CHEROKEE COUNTY

La Piere et al's No. 1 Woods, C SE SE Sec. 27-17-21 .... S.D. 1,504 ft.

COAL COUNTY

Radial Oil Co.'s No. 1 McGraw, NE NW Sec. 2-1s-6 ..... S.D. 1,450 ft.

COMANCHE COUNTY

T. E. Bradley et al's No. 1 Pruitt, NE SW SE Sec. 8-1-9w. Drlg. 900 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w..... S.D. 1,450 ft.

CREEK COUNTY

E. L. Jillson et al's No. 1 Starr, SE NW, Sec. 13-15-8 .... Rig.

CUSTER COUNTY

Miley Pet. Co.'s No. 1 Caldwell, NE Sec. 12-14-14w ..... Location.

GRADY COUNTY

English Drlg. Co.'s No. 1 Heenan-Coe, NE SE NE, Sec. 32-3-7w ..... Rig.
Carter Oil Co.'s No. 1 Carson, C SE SE SE, Sec. 13-3-8w. Drlg. 2,912 ft.
Schoonmaker et al's No. 1 Station, NW cor. 35-4-6w..... S.D. 40 ft.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w.. S.D. 5,850 ft.

GREER COUNTY

Dovell et al's No. 1 Capell, NW cor. Sec. 1-7-22w..... 5,000,000 ft. gas 1,455-65 ft.; T.D. 1,760 ft.
Frasch's No. 1 Murphy, SW NW Sec. 22-7-21w..... S.D. 1,645 ft.

HASKELL COUNTY

Ault et al's No. 1 Hall, NW SW SW Sec. 14-9-19 ..... S.D. 2,000 ft.
Ault et al's No. 1 Hall, SE NW Sec. 25-19-9 ..... S.D. 200 ft.

KAY COUNTY

Binebaugh et al's No. 1 Indian, C NW NE Sec. 30-25-1... Drlg. 2,161 ft.
Lewis et al's No. 1 Harris, SE NW Sec. 14-25-1 ..... Location.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-3 ..... S.D. 5,693 ft.
Blackwell Oil Co.'s No. 1 Harshman, Sec. 2-26-1w ..... Rig on ground.

KIOWA COUNTY

Christian's No. 1 Jones, NE SE Sec. 8-7-18w..... S.D. 1,200 ft.

LATIMER COUNTY

F. English's No. 1 Unknown, NW SE Sec. 16-6-19 ..... S.D. 1,542 ft.

LINCOLN COUNTY

Sovereign Oil's No. 1 Selakek, NE SE Sec. 2-12-5 ..... Drlg. 4,510 ft.
Hilton Phillips' No. 1 Phillips, SW NW Sec. 2-14-3 ..... Show oil and water; 6-in. csg.; swabbing; T.D. 5,080 ft., water.
Mote et al's No. 1 School Land, NW cor. Sec. 36-17-5 ... S.D. 3,570 ft.

NOBLE COUNTY

Wentz Oil's No. 1 Wolff, C SE NW Sec. 17-20-2w..... Rig.

OKLAHOMA COUNTY

Citizens Oil Co.'s No. 1 Sage Barber, NE cor. Sec. 21-11-3w ..... S.D. 1,200 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w ..... S.D. 5,515 ft.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW Sec. 6-20-5 ..... S.D. 1,950 ft.

PITTSBURG COUNTY

Ruby Ann Oil Co.'s No. 1 George, CEL NW SE Sec. 3-4-16 ..... Show gas 1,116-37 ft.; drlg. 1,225 ft.
Tape Oil Co.'s No. 1 Fulton, SE Sec. 34-7-14 ..... C.O. 1,700 ft.
J. Morrison's No. 1 Fowler, NE SE Sec. 13-7-17 ..... Rig.
C. Kennedy's No. 1 Travis, C SW NE Sec. 15-7-14 ..... Rig.
C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14 ..... Rig.

PONTOTOC COUNTY

Vanderalice's No. 1 Meredith, NE SW, Sec. 17-2-4 ..... S.D. 230 ft.

POTTAWATOMIE COUNTY

Clara Oil & Gas Co.'s No. 1 Unknown, SW NW NE, Sec. 1-9-4 ..... Drlg. 4,524 ft.
Barnsdall et al's No. 1 Gray, NE SW Sec. 25-6-4 ..... 3,484-90 ft.; 135 bbls. hr.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW Sec. 23-12-24w..... S.D. 5,150 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w..... S.D. 3,420 ft.

WASHITA COUNTY

Miley Pet. Co.'s No. 1 Wolfe, NE SW Sec. 33-9-17w ..... Rig.
Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w ..... Show oil 2,459-67 ft.; S.D. 2,757 ft.
Burns & Prince's No. 1 Deck, SW cor. Sec. 21-8-18 ..... S. D. 1,525 ft.

OKLAHOMA PANHANDLE

TEXAS COUNTY

Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-1E .. T.D. 4,720 ft.; to cement.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Morris et al's No. 1 Ray, NE NW NE Sec. 8-2S-12 ..... S.D. 256 ft.
Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10 ..... S.D. 1,967 ft.

BRYAN COUNTY

Hughes' No. 1 Ayres, NE SW Sec. 30-7S-7 ..... Machine.

CARTER COUNTY

Lundy's No. 1 Spraggins, C NE NW SW Sec. 8-1s-2w .... S.D. 3,340 ft.

JEFFERSON COUNTY

Smith's No. 1 McCarty, SE NW NE Sec. 18-4s-8w..... Location.

MARSHALL COUNTY

Curry et al's No. 1 Croft, NE NW SW SW Sec. 9-7s-6 ... Drlg. 580 ft.
Trailkill et al's No. 1 Spence, NE NW Sec. 10-7s-6..... Drlg. 595 ft.
Liggett et al's No. 1 McDuffee, SE NE Sec. 3-7s-6 ..... 805-09 ft., pumping 20 bbls.

McCURTAIN COUNTY

Prassell et al's No. 1 Wagoner, SE NE Sec. 5-8s-27 .... Show oil 560 ft.; 620 ft., S.D.
Stampfs et al's No. 1 Harris, SW NW SW Sec. 14-9s-25. S.D. 2,731 ft.
Stewart's No. 1 Patterson, C SE SE Sec. 7-6s-24 ..... Abnd. 1,411 ft.

PUSHMATAHA COUNTY

Whitehead et al's No. 1 Messer, SE SW SW Sec. 35-3s-18 ..... S.D. 1,950 ft.

STEPHENS COUNTY

Gillette Bros.' No. 1 Cooley, NW SE NW Sec. 17-2s-5w.. Location.
George's No. 1 Ryan, NW SW NE Sec. 31-3-15 ..... S.D. 510 ft.

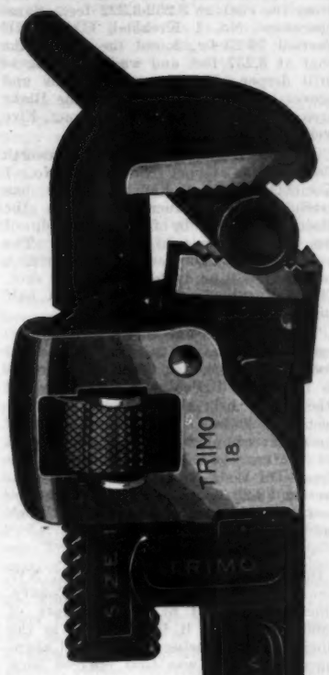
NEW WELLS IN GERMANY

The Florentine Co. has brought in, at a depth of 986 meters, a flowing well, the third of its kind, in the Berkhopen, Hanover, Germany. The well is beaned down and the oil is flowing under high pressure. This company, which is connected with Preussag, the Prussian government mining enterprise, reports that in 1931 it produced about 30,000 tons of crude oil. The refinery at Misburg, erected in connection with the Elwerath company, has been completed and is in operation; and the Florentine crude will be refined there. Another company, the Erdol-Bergbau, A.-G. (Ebag), of Celle, has been successful in two further wells, Nos. 1,040 and 107, in the Oberg district. The petrol content of the oil is about 22 per cent.

ON EVERY JOB

you're better off with a

TRIMO



CHECK YOUR SUPPLY and bring your wrench equipment up to date.

Your supply house is ready for fast deliveries.

Your TRIMO wrenches make you always ready for fast work.

TRIMO
Pipe Wrench

The mightiest wrench in the oil fields

Made by
TRIMONT MFG. CO., Roxbury, Boston, Mass.

New Wells in Barton-Ellsworth Area

Big Gasser in the Blake District and Oil Well in Holyrood. Standard of Kansas Plans Pipe Line to Ritz-Canton Field

By W. A. Spinney
Staff Correspondent, Kansas Fields

The territory along the Barton-Ellsworth Arch in the central western part of Kansas continues to yield both oil and gas wells. The gas-producing area was extended in the northeastern part of Reno County by Olson Drilling Co. and Shell Production Corp.'s No. 1 B. Goering, C NE NW Section 35-23-4w, which made approximately 60,000,000 feet a day from the chat at 3,232-3,322 feet. Same operators' No. 1 Krehbiel, C NE NE Section 26-23-4w, found the top of the chat at 3,257 feet and was preparing to drill deeper. The gas well widens and proves considerable acreage in the Blake area, making the pool 2 miles long. Five wells have been completed.

In the Holyrood area of Ellsworth County, the Gypsy Oil Co.'s No. 1 Kozick, SE cor. Section 16-16-10w, has extended the producing area in the Stoltenberg Pool by finding the top of the Siliceous lime at 3,354 feet. The well filled up 1,000 feet with oil in nine hours. It will be drilled deeper and shot. The well extends the production a half mile to the northwest.

Two new tests announced for McPherson County, one in the new McPherson Pool, and the other in the north extension to the Voshell Pool. J. Brennan and others' No. 1 in the NE cor. SW SW. Section 2-20-3w, is a location south of the recent completion by the Mid-Kansas Oil & Gas Co. The other location is Gypsy Oil Co.'s No. 2 Stucky, NE cor., Section 33-20-3w, which is two locations west and a location south of the Slick and others' extension well.

Failure in Reno County

Derby Oil Co.'s No. 1 Rainbow, NW cor. SE, Section 33-22-7w, Reno County, which was drilled to a total depth of 3,866 feet, where it found water in the Silicious lime is being plugged and abandoned. The test was first plugged back to the upper horizons where a showing of oil was found, but it failed to make a commercial producer.

About the same time that the Stanolind Crude Oil Purchasing Co. announced its reduction in crude oil purchases in the flush areas of the State, the Standard Oil Co. of Kansas announced it would construct a pipe line to serve the Ritz-Canton Pool, in McPherson County. The company has been taking rights of way for an 8-inch line. It will be approximately 150 miles in length. The company has a line from its refinery at Neodesha, in Wilson County to Eldorado, in Butler County.

At least two large pump stations will be built along the right of way of the projected line.

It is planned to ultimately extend the line to the Barton-Ellsworth Arch area, in Barton, Rice and Ellsworth Counties.

Continental Oil Co. and Gypsy Oil Co.'s No. 1 Bishop, NW cor. NE, Section 13-26-1w, Sedgwick County, swabbed 227 bbls. of oil from sandy lime at 3,058-66 feet and 3,076-82 feet. Drilling was continued to 3,160 feet, where water broke in from behind the casing, making further progress impossible without casing off the open hole. The test is more than a half a mile southwest of production in the Wright Pool and if it makes a commercial producer it will prove considerable territory.

For the week ending May 25, a total of 18 new operations were started in eight counties. Greenwood County leads with a total of five new operations; there were three in Rice County; two each in Ellsworth, McPherson, Sedgwick and Cowley Counties, while Barton and Chautauqua Counties reported one each.

The majority of these new operations were centered around production in the various areas. Greenwood's five new operations were in the Hamilton and Seeley districts. Rice County's new operations were located in the Sharpe and Beyers areas. Ellsworth County operations were located as follows, one in the Stratman area and the other is a wildcat. McPherson County's were in the Ritz-Canton Pool. Sedgwick County's are located in the Wright Pool. Cowley County's were in the Winfield townsite.

Winfield's Revival

Activity continues on the Winfield townsite in Cowley County, where more than a score of tests are now drilling and a large number of others have been staked or are in the process of development. The active development is spreading to the south of the college section of the city, and if leasing is any criterion a number of new locations will be announced as the development spreads.

Winfield city officials have granted a drilling permit to G. P. Dickey and others for a test at No. 1 Tibbetts, east of Reservoir Hill on the Winfield townsite, and to W. H. McKnab for No. 1 Snyder, located southeast of St. Johns College.

Production on the townsite is found in two horizons, one around 2,300 feet and the other the Siliceous lime at approximately 3,250 feet.

Production in the prorated pools in the central western part of the State showed a slight increase in the first 10 days of May as compared with the daily average production in April, due to the slight increase in the Ritz-Canton Decker Pool, McPherson County, and in the Ellsworth County area. Increase in the nominations by the purchasing companies in the Ritz-Canton-Decker area made it possible to increase the allowable from 6½ per cent to 8 per cent effective May 1. The entrance of the Eldorado Refining Co. as a purchaser in the Stratman area in Ellsworth County made it possible to raise the allowable of that area from 5 per cent to 10 per cent.

The withdrawal of the Stanolind Crude Oil Purchasing Co. as a purchaser in several of the pools in the central western part of the State on May 23 is expected to cause some reduction in the allowables of these different areas.

Allowable Production

The allowable production from pools in this part of the State and the potential production is shown below:

Pool—	Wells	Rated potential bbls.	Daily allowable bbls.
McPherson County:			
Ritz-Canton	140	110,869	13,006
Voshell	99	16,797	6,335
Johnson	3	4,000	265
Rice County:			
Schurr	12	11,988	2,062
Sharpe	1	200	96
Barton County:			
Isern	2	1,073	157
Ellsworth County:			
Heiken	1	1,182	81
Stoltenberg	4	5,376	525
Stratman	8	12,465	1,308
Rush County:			
Grenawalt	1	50	42
Stafford County:			
Richardson	3	4,000	469
Reno County:			
Hollow	1	400	200
Blake	2	250	119
Total	277	165,047	24,765

Empire Oil & Refining Co.'s No. 1 Masemore, SW cor. NW, Section 18-20-9w, Rice County, is the east offset to the No. 1 Sharpe, the discovery well in the area. It made 552 bbls. of oil in 12 hours and was given a potential of 1,104 bbls. of oil a day. It has been given an allowable of 50 bbls. a day by the field umpire. The well is the second completed in the area.

Cowley County

B. Garlapp and others' No. 1 Weighe, SW cor. NW, Section 9-32-4, is a rig. Deal Oil & Gas Co.'s No. 1 College Gym, NE cor. SW SE, Section 22-32-4, is a rig. Dickey and others' No. 1 Tibbetts, NW cor. NE NW NE, Section 27-32-4, is a rig. McCole's No. 1 Helper, NE cor. SW NE, Section 27-32-4, is a rig. McNabb and others' No. 1 Snyder, SE cor. SW NW NE, Section 27-32-4, is a location. Murphy and others' No. 1 Reservoir, NE cor. NW NW NE, Section 27-32-4, is a rig. Slocum and others' No. 1 Baker, NE cor. NW NE, Section 27-32-4, is a rig. Roth and Farout's No. 3 Southwestern College, SW cor. NE NW SE, Section 22-32-4, is spudding. Tighe and others' No. 1, C NW SE SE, Section 22-34-2, made 50 bbls. of oil and 15 bbls. of water from chat at 3,474-3,500 feet. G. Hinkle and others' No. 1 Berstrand, SW cor. SE SW SE, Section 22-32-4, swabbed 131 bbls. of oil in 12 hours and pumped 200 bbls. of oil from sand at 2,387-2,410 feet.

Douglass County

Hewitt and others' No. 1 Dodder, CNL SW SW, Section 7-15-18, was abandoned at 1,335 feet.

Ellsworth County

Skelly Oil Co.'s No. 1 Melchert, NW cor. SW, Section 6-17-10w, is a location. Barnsdall Oil Co. and others' No. 1 Warnhoff, NW cor. NE, Section 26-16-10w, is a location.

Greenwood County

Theta Oil Co.'s No. 25 Schneider, SE cor. SW NW, Section 10-23-13, is a rig. Lykes and Empire Oil & Refining Co.'s No. 1 Patterson, C NW SW NW, Section 36-23-11, is spudding. Houston-Oklahoma Oil Co.'s No. 1 Berry, C, Section 28-23-13, is spudding. Standard Oil Co. of Kansas' No. 1 Pees, CNL SW SW, Section 19-22-11, is spudding. Criswell's No. 1 Lowery, C SW SW, Section 22-26-9, was abandoned at 2,300 feet. Hoover and others' No. 1 Teegarden, SW cor. NE, Section 16-23-11, was abandoned at 2,110 feet.

McPherson County

Gypsy Oil Co.'s No. 2 Stucky, NE cor., Section 33-20-3w, is a location. Snyder and others' No. 1 Carlson, SE cor., Section 4-19-3w, is a location. Lario Oil & Gas Co. and others' No. 3 Boal, NE cor. NW, Section 24-19-2w, is a rig. Slick and others' No. 1 Grattan, NE cor. NW NW, Section 34-20-3w, old well drilling deeper, was drilling at 3,200 feet. Gypsy Oil Co.'s No. 1 Lovett, SE cor. SW NW, Section 24-19-2w, made 1,022 bbls. of oil from Viola at 3,384-99 feet.

Osage County

Briggs and Smith's No. 1 Wood, C SE NW, Section 21-14-15, was temporarily abandoned at 2,200 feet.

Reno County

National Union Oil Co.'s No. 1 Hill, NE cor. SE, Section 18-24-4w, is a location. Olson Drilling Co. and others' No. 1 Sabine, C SE NE, Section 24-23-4w, is a location.

Rice County

Langston and others' No. 1 Wells, NE cor. SE, Section 4-21-9w, is a rig.

Sedgwick County

Continental Oil Co. and Gypsy Oil Co.'s No. 1 Lambe, SE cor. NW, Section 12-26-1w, pumped 40 bbls. of oil and 200 bbls. of water from sand at 3,335-37 feet; total depth was 3,462 feet. Shell Petroleum Corp. and others' No. 1 Erdween, SW cor., Section 11-26-2, old well drilling deeper, pumped 47 bbls. of oil and 100 bbls. of water from 3,159-62 feet. Gypsy Oil Co.'s No. 6 Hamant, C SE NW NW, Section 14-26-2, made 202 bbls. of oil and 15 bbls. of water from 2,859-65 feet.

Woodson County

Nye and Kilby's No. 1 Shaffer, SE cor. SW, Section 31-23-14, was spudding.

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location— Remarks:

Midwest Ref. Co.'s No. 1 Scheufler, C SW SE Sec. 9-20-11w ..... Rig.

Skelton Oil Co.'s No. 1 Ott, C SE SE, Sec. 16-19-14w... Set liner 3,530-46 ft.; show oil; S.D. 3,600 ft.

BUTLER COUNTY

Cameron-Great Basin Oil Co.'s No. 1 Lardson, C SE NW Sec. 13-28-2 ..... Rig.

Ramsey's No. 1 Michael, SW NW NW Sec. 18-27-3..... R.O.G.

DICKINSON COUNTY

Severe et al's No. 1 Lavengood, NE SW, Sec. 13-13-2...S.D. 4,753 ft.

DOUGLASS COUNTY

Hewitt's No. 1 Dodder, CWL SW SW, Sec. 7-15-18.....Water 1,330-35 ft.; S.D.

EDWARDS COUNTY

Mid-Kansas O. & G. Co.'s No. 1 Converse, SW NE NE, Sec. 20-24-18w ..... Drlg. 3,000 ft.

ELLSWORTH COUNTY

Slick et al's No. 1 Dreford, SW NW Sec. 7-17-10w ..... Location.

R. Gear et al No. 1 Kroboth, SE NW Sec. 12-15-10w....Spudding.

Johnson Vickers' No. 1 Claussen, C SE NW Sec. 31-15-10w ..... Drlg. 1,450 ft.

R. Gear et al's No. 1 Sanberth, C SW SE, Sec. 29-16-9w. S.D. 50 ft.

GRAHAM COUNTY

Schleimeyer et al's No. 1 Smith, SE Sec. 24-8-25w..... R.O.G.

GREENWOOD COUNTY

York State's No. 1 Lifebare, NE NW NE Sec. 14-23-11... Location.

FINNEY COUNTY

National Ref. Co.'s No. 1 Wells, C SW, Sec. 13-23-30w... Drlg. 4,855 ft.

HARVEY COUNTY

D. R. Louck's No. 1 Regier, SW SE NW, Sec. 9-23-3w... Drlg. 2,110 ft.

J. Liggett et al's No. 1 Vessel, NE SW, Sec. 3-23-3w....Location.

Liggett et al's No. 1 Davis, SW SE NE, Sec. 7-24-1.....S.D. 2,500 ft.

KINGMAN COUNTY

Panhandle Drlg. Co.'s No. 1 Wetheral, C SE NW SW, Sec. 20-28-10w ..... 12-in. csg. 1,610 ft.; S.D.

McPHERSON COUNTY

Detrick's No. 1 Dalke, NW SE Sec. 16-19-1 ..... Spudding.

Sidwell et al's No. 1 Nichols, NE NW NW Sec. 28-17-1w. Location.

Simmons-Canary's No. 1 Krehbiel, SE NW Sec. 33-18-1w. Drlg. 500 ft.

Detrich et al's No. 1 Sinclair, SE SW, Sec. 34-19-1w... Drlg. 2,928 ft.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE, Sec. 32, 34-35w ..... T.D. 3,640 ft.; temp. abd.

MORRIS COUNTY

Urschel et al's No. 1 Bersuch, NW SE NW, Sec. 19-17-7.. S.D. 915 ft.

Kostle-Moseley & Hatfield's No. 1 Furney, NE SE, Sec. 16-16-8 ..... Abnd. 60 ft.

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w ..... Rig.

(Continued on Page 72)

Nineteen New Locations in Zwolle Field

Total of 56 Made Within 30 Days. Most Extensive Drilling Campaign Since Field Was Discovered. Mississippi and Alabama Operations Increase

By J. R. Crumpton
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., May 30.—Nineteen new locations were staked in the Zwolle chalk rock field of Sabine Parish, North Louisiana, during the past week, making a total of 56 new locations and drilling operations for this area during the last 30 days. Most of the drilling activity is centered in the eastern and western extremeties of the field, about 15 miles apart, where steady development has been progressing for more than a year since these extensions were first uncovered. Several good wells of the gusher type, recently completed in both areas, have started the most extensive drilling campaign since the field was discovered over two years ago. Production, coming from breaks or crevices in chalk rock, is encountered on the eastern flank from 2,400 to 2,600 feet, but the western area gets the pay at higher levels, from 2,100 to 2,385 feet. Both of these extremeties of the field, particularly the western flank, have produced more consistently than the area lying between, and the recent good wells completed indicate that much more territory will be added to the productive area.

In addition to the new operations, this field came through with five new producers out of as many completions during the last seven-day period. The best well for the week was the Pelican Natural Gas Co.'s No. 8 Sabine Lumber Co., Section 3-7-13, with an initial flow of 1,000 bbls. of pipe line oil daily from 2,370 feet. The new producer extends the western flank of the field one-half mile west and south from W. M. Coates' No. 1-B S. S. Martinez which extended production 1 mile west as a 2,000-bbl. gusher a few weeks ago. This area also furnished another producer, M. L. Friend's No. 1 Nulton, Section 2-7-13, flowing 200 bbls. daily from 2,202 feet. This well is between the new extreme production and the original pool of the southwestern extension in Section 1-7-13. Fourteen miles to the east, the Crescent Drilling Co.'s No. 4 Byrd, Section 12-7-11, is pumping 66 bbls. daily from 2,531 feet, and Jack Lanier and others' No. 1 Petty, Section 11-7-11, was completed as a 50-bbl. pumper from the total depth of 2,575 feet. The Pelican Natural Gas Co. brought in its second well in Zwolle during the week with the completion of its No. 13 Louisiana Long Leaf Lumber Co., Section 9-7-11, flowing 150 bbls. daily from 2,432 feet.

One Gas Well, Four Failures

One gas well from Union Parish, North Louisiana, and four wildcat failures from widely scattered districts completed the list of 10 finished operations for this division. The Southern Carbon Co.'s No. 50 fee, Section 17-20-4e, Union Parish, gauged an initial flow of 7,793,000 feet of dry gas from 2,160 feet. As predicted last week, J. K. Wadley's No. 1 Matthews, Section 11-23-9, in the northern part of Webster Parish, failed to make a producer and was abandoned in salt water at 2,825 feet.

Shelby County Failure

In the northeastern part of Shelby County, East Texas, Fuller & O'Brien Brothers abandoned their No. 1 Frost-Johnson Lumber Co., Aaron Castleberry Survey, at 2,324 feet. The test failed to encounter the anticipated oil sand around the 1,500-foot level which was picked up in Oil News' No. 1 Pickering in that vicinity a few months ago. The latter well was completed slightly below 1,500 feet pumping about 50 bbls. of oil and an equal amount of salt water. Several other wells in this section have encountered oil and gas at various lower depths.

Mississippi Disappointment

In Sharkey County, Mississippi, quite a disappointment resulted from the abandonment of the United Gas Public Service Co.'s No. 1 Lenhart, Section 14-14n-6w. The wildcat was drilled on a block of 60,000 acres assembled by this company in Humphreys, Washington and Sharkey Counties and previous surveys of the territory indicated better results. The test had a show of oil in sandy shale in the Midway below 3,600 feet, but tested salt water at 3,670 feet and was abandoned as dry at 3,807 feet. There is a probability that at least one other test will be drilled on this block.

South of Pleasant Hill

In the northern part of Sabine Parish, south of Pleasant Hill, Frank Foster, Inc., abandoned its No. 1 Stevens, Section 20-9-11, in salt water sand at 3,701 feet. This wildcat was finished about a month ago, gauging 14,000,000 feet of gas from 3,358 feet and was deepened in an effort to pick up an oil-bearing sand underlying the gas. The first test in this vicinity, the Langbridge Oil Co.'s No. 1 Stevens, about 1 mile northeast of the Foster gasser, has been flowing about 30 bbls. of 39 gravity oil daily from 3,366 feet since its completion last October. About 4 miles north and east of these two tests another wildcat is now testing with indications of interesting results. J. M. Bridges' No. 1 Armstrong, Section 28-10-11, is reaming to make a drill stem test at 3,389 feet. The crew cut a core of 16 feet of soft formation, believed to be sand, from 3,373-89 feet, but only about 1 foot was recovered. The core revealed part of the cap rock and a likely looking sand with a strong petroleum odor. The show is coming from the Washita or Fredericksburg horizons of the lower cretaceous as identified in the Langbridge and Foster tests.

Mississippi Wildcats

Two new wildcats have spudded in in Mississippi both of which are on the eastern border of the State near the Alabama line. In Clarke County, F. X. Gowans and others are drilling at 150 feet on their No. 1 Elfring in Section 13-1n-14e. The Gulf Refining Co. drilled two wildcats in this county in 1931, its No. 1 Box, Section 11-2-15, was dry and abandoned at 4,515 feet without encountering any particularly good show anywhere along the log. Same company's No. 1-A Long Bell Lumber Co., Section 10-2n-16e, developed 30 feet of 16.8 gravity oil from the Eutaw from 3,692 to 3,700 feet. The test also showed 50 feet of salt water at this depth and was deepened to 4,775 feet in the Tuscaloosa formation where it was abandoned as dry.

The recent session of the Mississippi legislature passed a resolution authorizing the board of supervisors and voters of Clarke County to pay a bonus of $20,000 to the first operator or company completing a commercial oil well in the county. The funds for this purpose would be derived from a bond issued voted by the qualified voters of the county, the assessment to be against real estate property. In Lowndes County, to the north of Clarke, the Lowndes County Oil & Development Co.'s No. 1 Carr estate, Section 34-17n-16e, has set 12½-inch casing at 28 feet and is arranging to test a likely looking sand at 1,040 feet. The Mississippi-Minnesota Oil Co.'s No. 1 Edwards Land Co., Section 23-6n-4w, in the western part of Hinds County, is drilling at 2,930 feet.

Alabama Wildcats

The Alabama wildcats did not develop anything of interest during the week. Tidal Oil Co. and others' No. 1 Hobson, Section 33-6n-2e, Clarke County, is drilling at 2,195 feet, and DeSoto Oil & Gas Corp. is drilling at 1,545 feet on its No. 1 Gardner, Section 22-15s-16w, in Lamar County. The drilling contractor on this test is arranging to finish the well with cable tools. In the southwestern part of the State, Washington County, the South Alabama Oil & Gas Co. is moving in rig and rigging up on its No. 1 Wilson, Section 26-7n-1w.

Arkansas Wildcats

Two wildcats in Arkansas had barren results on tests. In Miller County, Fitzwater and others' No. 1 Beck, Section 33-15-26, topped the red beds at 2,812 feet, and the hole stands temporarily abandoned at 2,875 feet. Pigeon Hill Oil Co.'s No. 1 Union Saw Mill Co., Section 19-17-12, Union County, tested salt water at the top of the Blossom sand at 2,887 feet.

East Texas Border

One new test has spudded in in Marion County, East Texas, M. M. Howard's No. 1 Hussley, Charles Lockhart Survey, is drilling at 155 feet. In the same county, Purcell and others' No. 1 Coker, M. Reed Survey, is in red shale at 1,957 feet. A new test for Harrison County, M. E. Nash and others' No. 1 Henderson, G. L. Bledsoe Survey, has set 10-inch surface casing at 85 feet. In the eastern part of Shelby County, the General Minerals Corp. (formerly E. L. Chapman) is coring in sand at 1,868 feet in its No. 1 Pickering Lumber Co., D. S. Height Survey. This test is about 1½ miles southeast of E. L. Chapman's No. 1 Pickering, completed as a good gas well around the 3,800-foot level during last year. Two tests in Shelby have junked holes and are skidding over to spud in. K. H. Francis' No. 1 John Mimms, Mary Smith Survey, skidded 125 feet west after junking the old hole at 3,382 feet. The old well topped the Pecan Gap at 2,175 feet and encountered the top of the Austin chalk at 3,330 feet. Henry Maulding's No. 1 Frost Lumber Co., A. D. Fountain Survey, junked the old hole at 3,276 feet and skidded over 25 feet east to begin a new test.

Daily Average Runs

There was a net decrease of 260 bbls. in the daily average runs from the fields of North Louisiana and Arkansas during the past week. The daily average runs from the several pools were:

NORTH LOUISIANA	Bbls.
Caddo, light	5,405
Caddo, heavy	2,090
Cotton Valley	565
DeSoto and Red River	1,990
Elm Grove	220
Haynesville	4,415
Holly	285
Homer	2,885
Pleasant Hill	295
Sarepta-Carterville	780
Urania	3,510
Zwolle	6,800
Total North Louisiana	29,250
Total previous week	29,430
Decrease	180

ARKANSAS	
Champagnolle	1,850
El Dorado	3,020
Lisbon	505
Nevada	1,100
Smackover, light	2,960
Smackover, heavy	23,560
Stephens	660
Urbana	600
Total Arkansas	34,285
Total previous week	34,365
Decrease	80
Total both states	63,535
Total previous week	63,795
Decrease	260

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

AVOYELLES PARISH

Company, well, farm name, section and block— Remarks:
Stauffer & Eshleman's No. 1 Caruth, Sec. 40-1n-7e.....Derrick.

BOSSIER PARISH

Dr. W. N. Hankins' No. 1 Newell, 300 ft. S and W, NE cor., Sec. 12-19-11 .....Drlg. 170 ft.

CADDO PARISH

Pyramid O. & G. Co.'s No. 2 Beard, Sec. 9-8-16, 660 ft. S, 1,980 ft. W, NE cor. Sec. .....Set 6⅝-in. 2,750 ft.

CALDWELL PARISH

Carter Bell's No. 1 Taylor, 150 ft. S, 150 ft. E, NW cor. NE SE, Sec. 17-14-4 .....Drlg. lime 3,397 ft.
Hudson et al's No. 1 Burton, Sec. 35-12-2e .....S.D. 2,950 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMiller, 70 ft. N, 100 ft. W, C, Sec. 26-9-6.....T.A. 3,097 ft.

DE SOTO PARISH

Coker et al's No. 1 Boone, 200 ft. N and W, SE cor. SW NW, Sec. 13-10-11 .....Derrick.
Donley & Chastain's No. 1 H. Smith, 325 ft. W, 600 ft. N, SE cor., Sec. 31-14-15 .....Reaming 2,200 ft; T.D. 2,295 ft.
S. A. Guy's No. 1 Dowling, 469 ft. E, 382 ft. S, NW cor. NE, Sec. 31-14-14 .....Washing to bottom 1,354 ft.
E. T. Oakes' No. 1 R. H. Bryant et al, 200 ft. N and W, SE cor. NE NW, Sec. 36-13-15.....Coring 3,573 ft.
A. R. Smith's No. 1 Horn, Sec. 16-12-16, NE cor. Sec. ..Rigged up and S.D.
DeSoto Dev. Co.'s No. 1 Nickey, Sec. 7-13-12.....Derrick.
Rudesealc et al's No. 2 Naboes, Sec. 6-12-11 .....Drlg. 400 ft.
Standard Oil Co. and Pelican Nat. Gas Co.'s No. 1 Sutherlin, 320 ft. N, 360 ft. W, SE cor. SW, Sec. 19-12-14 .....Set 12½-in. 118 ft; drlg. 625 ft.
Walters-Nicholson, tr.'s No. 1 Jim Guy, Sec. 3-11-13....S.D. 2,300 ft.

GRANT PARISH

Security Pet. Corp.'s No. 1 Swope est., Sec. 16-9-1e, 1,698 ft. N, 320 ft. E, SW cor. Sec. .....Testing 1,583 ft.
O. Robichaux's No. 1 T. M. Bradford, 1,870 ft. E, 314 ft. S, NW cor., Sec. 16-9n-1e .....Location.

NATCHITOCHES PARISH

W. M. Coates' No. 1 Ross Olive, Sec. 10-9-10, 660 ft. S and E from cen. of Sec. .....Rigging up.
Dr. H. S. Gerson's No. 1 Smith, Sec. 11-10-8, 2,000 ft. N, NE cor. of irregular Sec. 10, in Sec. 11..... S.D. for D.S. 1,200 ft.
R. A. Keaton's No. 1 Stephens, Sec. 25-10-6, 320 ft. N and W, SE cor. NW NW.....S.D. 1,500 ft.
H. W. Perritt's No. 1 Cook, 165 ft. E, 165 ft. N, SW cor. NE SW, Sec. 3-8-9.....S.D. 2,373 ft.
H. W. Perritt's No. 2 Brown Lbr. Co., 300 ft. N and W, from center Sec. 29-8-9 .....Drlg. 1,151 ft.

(Continued on Page 72)

Fourteen Completions in Central West

Seven Were in Central Ohio and Seven in Lima Field. Several Tests for Gas in Grayson County, Kentucky, Near Litchfield

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, May 30.—The Central Ohio division had seven completions and the Lima Field reported the same number. The Tiffin Field in Seneca County reported five new wells, four of which were light gas producers. Tiffin Industrial Gas Co. hit a small gas well on the C. Swartzmiller farm, Section 35, Liberty Township, Seneca County, and started No. 2, same farm. Ceasna-Feasel Oil Co. is drilling on the J. R. Puffenberger farm, Section 7, same township. Four gas wells were completed in the Tiffin Field, in Hopewell Township, Seneca County, but all very light gas producers, being Ray Temple's No. 1 Ray Knepper farm, Section 11; Sandusky Gas Co.'s No. 1 Lorenzo D. Creeger farm, Section 16. J. H. Murphy and Son's No. 3 Cyrus D. Knepper farm, Section 11, a small gasser in the Trenton lime, from 1,444-69 feet, and the same firm's No. 1 Fay E. Sparks, Section 11, a dry hole in the same formation from 1,462-96 feet. This well also showed a small amount of gas. Tiffin Industrial Gas Co.'s No. 1 on the Mathies W. Hunker farm, Section 2, was a light gas well. Same company is drilling a second test on the same farm. Charles Shaul and others are drilling No. 1 James F. Kuhn heirs, Section 13, same township, and J. L. Barrett is drilling No. 1 T. N. Einsel farm, Section 1, also in Hopewell Township.

M. R. McPheron and others drilled in a dry hole on the Edward Walton farm, Section 10, Crane Township, Wyandot County, at from 1,433-65 feet, in the Trenton lime formation.

In Scott Township, Sandusky County, George A. and John A. Willard abandoned their old No. 19 on the J. C. Fisher farm, Scott Township, same county, and in Jackson Township, Ohio Oil Co. pulled out and abandoned Nos. 3, 4, 5, 6, 7 and 9 J. N. Snyder farm, Section 16.

In Wood County, Montgomery Township, in the old Freeport Field, the Ohio Oil Co. abandoned Nos. 4, 7 and 13 A. Hyter farm, Section 3, also Nos. 8, 9, 10, 11 and 12 Samuel Hemminger farm, same section, and Onsel Brothers pulled out Nos. 1, 4, 5 and 6 Helen M. Flaherty farm, Section 30, same township. In Freedom Township, A. J. Klingman abandoned Nos. 1, 4, 5 and 6 Schaberg Brothers farm, Section 33.

In Hancock County, Youngiove and others are drilling on the Bertha Moore farm, Section 14, Biglick Township, and Pember and Reydner are drilling on the Ray and Ellsworth Wagner farm, Section 27, Jackson Township, Wood County.

Independent Torpedo Co. is drilling No. 7 on the Cains Henry farm, Section 14, Pleasants Township, Hancock County. C. A. and F. Peavey are drilling near the Trenton lime in No. 15 on the Elias Lewis farm, Section 1, Bath Township, Allen County.

Four completions were made in the Monclova Field, west of Toledo, in Lucas County, after standing for a long period. Dillon & McFrederick's second test on the H. and A. Goldbrath farm, Section 29, Monclova Township, produced an initial of 25 bbls. John Doblinger's No. 1 on the Solomon C. Betts farm, Section 8, same township, produced an initial of 20 bbls., while M. Gray and others' No. 1 Keil Brothers farm, Section 28, has been given up as a dry hole. E. J. Davis and others have a rig on the Charles B. Holloway farm, Section 7, same township. In Bloom Township, Wood County, Carl H. Shroyer abandoned Nos. 16 and 23, George G. Zody farm, Section 6, and drilling No. 25, same farm. In Plain Township, same county, Barclay Perry abandoned No. 1 George Foos, Section 34.

No completions reported from Indiana and Illinois Fields for the week.

CENTRAL OHIO

Of the seven completions reported from the Central Ohio Field, five were gas wells and two dry holes, no oil wells being reported. Stark County leads with two completions. East Ohio Gas Co.'s No. 2 George H. Charls farm, Section 24, Jackson Township, is a very nice gas producer from a depth of 4,426 feet, while White & Bacon's second test on the Besse J. Slagle farm, Section 14, same township, is also a good gas well at a depth of 4,378 feet. Brendall and others are drilling on the Lake Cable Co.'s land, Section 23, same township, and Frye & Bacon are starting a test on the Board or Education, Section 16, same township.

In Summitt County, Green Township, East Ohio Gas Co. drilled in an average gas producer in No. 2 F. S. Keifer, Section 18, at a depth of 4,183 feet, and may drill deeper.

In Fairfield County, City Natural Gas Works of Lancaster struck a light gas well in No. 4 on the E. Ruff farm, Section 2, Berne Township, in the Berea sand from 671 to 678 feet.

In Guernsey County, Cambridge Township, an average gas well was drilled by Charles Smith and others on the House & Wilson farm, Fourth quarter section, at a depth of 1,231 feet.

In Belmont County, Washmuth & Callahan found a dry hole on the George A. Neptune farm, Section 22, Somerset Township, at total depth of 1,828 feet in the Berea sand. O. K. Oil Co. is drilling on the Palugn and Lynn land, Section 34, Union Township, same county. Gibson Bradfield and others failed to find any oil or gas pay on the Patterson heirs farm, Section 32, Somerset Township, at 1,250 feet, and are going deeper.

In Meigs County, E. G. Harper and others' test on the Pearl D. Hysell farm, Section 27, Salisbury Township, has been abandoned as a dry hole at 810 feet, the hole being full of water.

KENTUCKY

H. Z. Clark, W. K. Snyder, Mrs. K. Wilson and Mr. Wittmer purchased some time ago the holdings of L. C. Young and others in Hart County, involving leases on 1,266 acres, with 35 oil producing wells and 3 gas wells, with an estimated production of 1,750 bbls. of oil and 2,000,000 feet of gas, the price paid being reported at $350,000. According to reports this same property has been sold to C. C. Stoll and Sons, William and Berry Stoll, of the Stoll Oil Co. of

(Continued on Next Page)

Washington County, O., Disappoints

Hopes of Deep Sand Pool Have Died but Fair Production in One Test Attracts Attention. Four West Virginia Completions

By Staff Correspondent

PITTSBURGH, Pa., May 30.—In a notice sent to all producers connected to the lines of the Buckeye Pipe Line Co. in Southeast Ohio, the Eureka Pipe Line Co. in West Virginia and the Southwest Pennsylvania Pipe Lines in southwest Pennsylvania, the South Penn Oil Co. advised the operators with whom contracts exist for oil as run, that allowable production for the month of June will remain at 90 per cent of their production figures for November, 1931. The notice states in part, "Our company has notice that its outlet for Pennsylvania Grade oil throughout the month of June will be the same as through the month of May. Therefore, we must again ask that all our customers continue their curtailment of production throughout June in keeping with the curtailment asked for the month of May.

"We trust you will appreciate that we are doing everything we can to expand the outlet for Pennsylvania crude and that you will help us in this effort to effect an orderly curtailment of production until such time as the demand returns to normal." As the South Penn Oil Co. is the largest producer of Pennsylvania Grade crude in the East, and as its contracts with producers cover the greater part of the remainder, practically the entire three districts mentioned are governed by this decision. In a few sections of the East, independent pipe lines are still maintaining full production and carrying heavy stocks.

Little headway was made in the three districts of the Eastern fields with but six completions, evenly divided as producers and gas wells. None of them was large and but one of more than passing interest. The number of wells drilling continues at the level of the past few months.

SOUTHEAST OHIO

But two wells were completed in Southeast Ohio during the week and one appears as a fair test. In the NW, Section 11, Reading Township, Perry County, the Mid East Gas Co. completed a test on the Metta Snider farm in the Clinton sand at a depth of 3,080 feet. It produced about 5 bbls. the first 12 hours naturally along with a head of gas estimated close to 300,000 feet a day. The well will be shot in the Clinton sand this week.

In Section 32, of Pleasant Township, Perry County, the Allegheny Oil Co. completed the only other well in Ohio. It was No. 19 on the W. C. Longstreth farm and was drilled down to the Berea sand at 1,153 feet. It is showing for about 2 bbls. a day after shot.

Washington County

With the series of disappointments that have been encountered in southeast Washington County, Ohio, hopes of a deep sand pool have died but on account of the continued fair production of the Harris test on the Crago farm, the SW, Section 11, Grandview Township, of a light colored high gravity crude unlike the rest of the field, the problem still attracts attention, and some work is being done.

In the NW, Section 10, Independence Township, Eugene E. Grimm and others have reached the top of the Second Warren sand at 3,100 feet and will prove the E. E. Knowlton farm this week. In the same section, the Penn Ohio Gas Co. having found the Third Warren dry at the D. R. McKnight farm, continued drilling and is at present on the top of the Speechley sand at 3,500 feet. At this depth there is a showing of gas and the hole will be deepened. On the John G. Semmler farm, the same company is drilling a test at a depth of 2,150 feet. This location is the SE, Section 16, Independence Township. In the same section, the Buckley and McCall test on the Porter Pryor, the northwest quarter of the section, is standing at 3,200 feet and dry at that depth, but will be drilled deeper if other developments warrant it.

In Grandview Township, the operators, E. J. Mildren and others, are fishing for the tools at 3,280 feet on the William Barber farm about 200 feet away from the Crago well and with no showing in the Warren sands. The Thomas McVey and others' test on the Cordray sisters' farm, the SW, Section 24, is being abandoned as a dry hole.

The Reno Oil Co. has made fair progress in its deep test on the J. H. Goodman heirs' farm, the SE, Section 14, Independence Township, the tools having reached 750 feet. In Section 32 of this township, J. T. and Anna B. Campbell reached the Maxon sand at 1,200 feet and found it dry. This test will probably be abandoned without deeper drilling.

Other Ohio Drilling

In Noble County, five wells are drilling and a new rig standing. In Section 31, Enoch Township, Harper Brothers have reached a depth of 925 feet in their test on the Douces Morland farm. In Section 15, Olive Township, a shallow sand district, Woodford Brothers have started a second test on the George Woodford farm and are down 60 feet. In Section 14 of this township, W. M. Patten and others have reached 200 feet in No. 10 on the Austin Cunningham farm. B. E. King has No. 7 drilling on the L. R. Crum farm, Section 7, Enoch Township, and it is down 150 feet. In Jefferson Township, the Cain Oil & Gas Co. has a rig standing for No. 7 on the Alice Mallett farm.

In Muskingum County, deep sand drilling, the Atha Oil Co. has a test drilling on the Arthur Taylor farm, Section 15, Union Township, which has reached a depth of 2,000 feet. In Washington Township, the Mehowa Oil & Gas Co. has rigged up on the J. A. Williams' farm, Section 11. In Tuscarawas County, the Gordon Oil Co. is about due in the sand in its test on the Martha Carroll farm in Section 32, Washington Township.

WEST VIRGINIA

West Virginia presented four wells as the total of the week's work, one producer and three gas wells. The producer was fair and was No. 23 of the Virginian Gasoline & Oil Co. on the Henry Closterman farm in Harvey district, Mingo County. It was completed in the Maxon sand at a depth of 1,184 feet and started off at 12 bbls. a day. This is an offset well to the Norton test on the Riley Spaulding farm and about 250 feet southeast of it.

New Gassers

In Calhoun County, Creed Barker and others completed a test on the A. J. Huffman farm in Sherman district at 2,249 feet and in the Injun sand. It will make

a very light gas well naturally. In Gilmer County, A. E. Ellis and others completed a test on the Alice M. Ayers farm, DeKalb district, in the Injun sand at 1,812 feet. It is showing for about 250,000 feet a day naturally.

In Lincoln County, the Turtle Lick Gas Co. drilled a test on the J. F. Thompson farm in Jefferson district. After cleaning out after shot it is showing for a small gas well from the Injun sand at a depth of 2,282 feet.

Drilling in West Virginia

In Ritchie County, Bradley, Ridgeway, Kirk and others have spudded in and started drilling on the W. H. Ridgeway farm in Clay district. It is down 100 feet. In the same district, Ross Richards and others have made a location on the L. E. Robinson farm. In Murphy district, C. B. Lewis and others have reached 1,775 feet in a second test on the Delia Lyons farm. In the same district, the King Knob Oil Co. has a rig standing on the Albert Carpenter farm. In Grant district, R. C. Jackson remains shut down at 1,445 feet on the Rutherford heirs' farm.

In Kanawha County, the Cannelton Coal Co. has abandoned its locations for three wells on its own property in Cabin Creek district, Nos. 15, 16 and 17. In the same district, the Winifrede Co. abandoned its location for No. 16 on the Bedford Trust lease, and in Elk district, No. 19 location on the G. W. Wentz farm was also abandoned. In this district, the Kendall Oil & Gas Co. gave up its location for No. 5 on the Frank J. Kendall farm. In Sherman district, the Pure Oil Co. has reached 2,131 feet in No. 57 on the Federal Coal Co. tract.

In Fayette County, Grosscup and Schultz have abandoned three locations, Nos. 5, 6 and 7 on the Black Betsy Coal Co. tract in Kanawha district. In Wayne County, the Penn Natural Gas Co. has a second test drilling on the Guyan Valley Bank lease in Union district, which has reached 1,900 feet. In the same district, the South West Virginia Gas Co. is down to 618 feet on the A. W. Preston farm, and has shut down for repairs.

In Monongalia County, the Pennsylvania Counties Gas Co. has a test drilling on the J. L. Jamison farm and has passed the 600-foot level. The West Penn Gas Corp. is still shut down on the Wood Kimble farm in Battelle district with the bit in the hole at 2,580 feet. In Grant district, the Kane Oil & Gas Co. is drilling on the Jamison. In Pleasants County, William Tice has reached 1,320 feet on the W. F. McKnight farm in Lafayette district.

In Logan County, the West Virginia Gas Co. is down 1,785 feet in No. 36 on the Dingess Run Coal tract in Logan district. In Chapmansville district, the Cumberland Petroleum Co. has reached 635 feet on the Merrill Coal Co. lease, No. 7.

SOUTHWEST PENNSYLVANIA

No completions were made in Southwest Pennsylvania during the week, though there are slightly more wells drilling. In Greene Township, Greene County, J. L. Garard & Co. drilled No. 26 on the C. Gregg farm through the Dunkard sand and to a depth of 905 feet. It was dry and is being abandoned. In this township, the same operators have a rig standing for No. 27 on the same farm. In Greene Township, again, Fred Garrison has shut down at 550 feet on the C. D. South farm.

In Springhill Township, Greene County, three wells are being drilled deeper from the Injun sand. The Little Four Oil & Gas Co. reached 2,650 feet on the Sallie Roach farm, No. 5, and shut down, fishing for the tools. On the J. E. Laugh farm, the Carnegie Natural Gas Co. is drilling its No. 1 deeper and has reached 2,270 feet. The South Penn Oil Co. is also drilling its No. 4 on the W. F. White No. 1 lease deeper from the Injun and it is 2,550 feet.

CENTRAL WEST FIELDS

(Continued from Preceding Page)

Louisville. This transaction is composed of 18 oil and gas leases in the Legrande Field, but the amount the property brought has not been announced. The Stoll Oil Co. will pipe the oil to its refinery in Louisville.

In the Hart County Field there is little activity on account of the low price of crude, but when it does increase much work will start. The goal is dollar oil, and little will be done until that price is announced. Just at this time there is active leasing going on in Grayson County, which lies between Ohio and Hart Counties and in line for shallow production of both oil and gas. Three large concerns are leasing blocks for development work. Some oil and gas has already been found in Grayson County, near Litchfield, the county seat. Two recent gas wells have been brought in at the west edge of Litchfield, on the Shartzer property, by the Kentucky Public Service Co., with an estimated volume of 500,000 feet, and one by the same company about 10 miles southwest of Litchfield, on the Seaton farm, estimated at 1,000,000 feet. C. E. Cornelius is drilling on the Poney White, south of Litchfield, at the town of Meredith, and Miller Brothers are starting a test on the Van Meter farm, west of Meredith. This gas in Grayson County is found in the Beaver sand, the same sand in which oil and gas are found in the old Wayne County territory.

Completed Wells

In Ohio County, Chester Oil Co.'s test on the Chambers Motor Co. property, 1½ miles northeast of Deanfield, is reported good for only 1 bbl., while Fred Weir and others drilled a dry hole on an unknown lease, about 1,000 feet east of the big oil producer recently found by Paul Goldberg and others on the Roy Owens lease, in the Barrett Hill area. Ellis, Carpenter and others' No. 2 Lucille Taylor farm, in the Adaburg Pool, is said to show an initial of around 30 bbls.

In Daviess County four wells were reported. Mecca Oil Co. reports a dry hole on the S. Shulty farm at a depth of 610 feet. Evans and Garrison also got a dry hole in the northwest corner of the Edward Barrett farm, in the Jones Pool, at 590 feet. Sam T. McGill and others drilled a dry hole in the northwest corner of the Ashward heirs farm, near Pellville, an offset to a good gas well. S. H. Russell and others' No. 3 Well, 800 feet from the south and east lines of the H. O. Neel 75-acre farm, about 3 miles northeast of Whitesville, produced an initial of 15 bbls.

In Hancock County, Pellville Field, Vicars and others' test, 350 feet from the north line and 150 from the west line of the E. H. Bannon farm, came in a dry hole.

S. M. Shermon's second test, 400 feet from the south and east lines of the J. T. Mayfield farm, in the Red Hill Pool, of Daviess County, produced an initial of 75 bbls. Mecca Oil Co.'s second test, 225 feet from the east line of the S. Shulty farm, came in a dry hole at 610 feet. Goldberg and Ellis drilled a dry hole in the southeast corner of the Harrison Brothers farm in the Sugar Grove area of Daviess County.

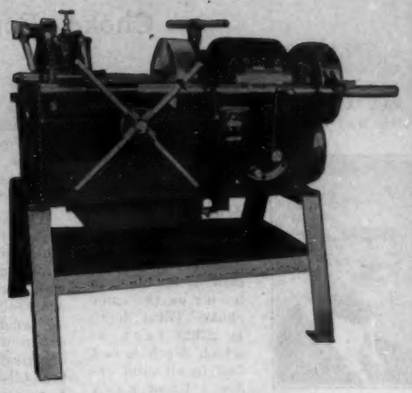
INCREASES ASSETS

NEW YORK, May 28.—The plan inaugurated in 1930 by Creole Petroleum Corp., Venezuelan subsidiary of the Standard Oil Co. (New Jersey) to transfer its assets to the Standard Oil Co. of Venezuela, as the operating company, has been completed. Creole owns all the stock of the Venesuela concern. At the close of 1931 Standard Oil Co. of Venesuela held oil concessions for exploration and exploitation totaling 5,370,450 acres. At the close of the previous year Creole's subsidiaries held 6,573,746 acres.

MERLE VOLWAY DIES

CHATHAM, Ontario, May 28.—Merle Lee Volway, driller, aged 34, died very suddenly at Petrolia, Ontario, on May 21. A native of Petrolia, Mr. Volway learned his trade at Dunnville, served overseas in the 149th Battalion, C.E.F., and drilled in Borneo, Sumatra and California. He returned last year to Petrolia.

THE GREATEST—



"TOLEDO" No. 1-2-4 1" to 4" POWER PIPE MACHINE

—1" to 4" pipe machine today.

Unusually productive and efficient. 4" pipe is threaded in 42 seconds, cut off in 9 seconds. Separate quick-opening die head for each size assuring instant die change. Cutter head of special design with four blades cutting simultaneously cuts pipe off very rapidly.

All controls in easy reach of right hand. Automatic lubrication. Safety friction gear prevents overload.

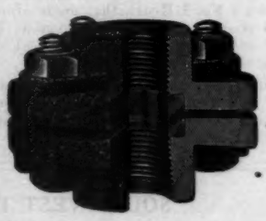
These features and many others make the "TOLEDO" No. 1-2-4 *the* pipe machine for 1932.

For further information see your dealer or write direct to us.

THE TOLEDO PIPE THREADING MACHINE CO.
TOLEDO, OHIO. NEW YORK OFFICE, 72 LAFAYETTE ST.

"TOLEDO"

DART UNIONS AND FLANGES



Two Bronze Seats

May we send you sample to try on your most troublesome line? It is absolutely free. Write today for catalogue "O."

E. M. DART MFG. CO., Providence, R. I.
The Fairbanks Co., Distributors

Ross-Meehan Foundries

Manufacturers—

RIVER CLAMPS a Specialty

Williamson Multispeed Winch for Oil Fields
Williamson Drum Units
Electric Steel Castings, Electrically Annealed
"Certified" Malleable Iron Castings
"Meehanite Metal" Castings
Gray Iron Castings
Special Analyses Castings for—
Oil Producers and Refiners

Chattanooga, Tennessee, U.S.A.

Good Well North of Government Wells

Three Miles From Production and Flowing 90 Bbls. an Hour on Choke. Four New Tests Starting. Storm Levels 100 Derricks

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., May 30.—J. S. Suttle and others' No. 1 Bennet, Survey 44, Duval County, came in Saturday last flowing at the rate of 600 bbls. daily through three-eighths-inch choke but in a few hours had increased to a flow of 90 bbls. an hour on the same choke. Total depth is 2,329 feet, at which depth it is 1 foot in oil sand under a 1-foot rock but casing is set at 2,288 feet on rock under which there is a sand with an estimated gas flow of 1,000,000 feet or more.

This well is 3 miles north of the nearest production in the Government Wells original pool which is located almost entirely in Survey No. 250, where wells are producing oil at around the same depth as Suttle's No. 1 Bennett. A half mile to the west of Suttle's test Seacord & Putnam a few weeks ago brought in No. 1 Johnson at 1,567-74 feet for around 10,000,000 feet of gas daily and Suttle's No. 1 Bennett picked up this sand carrying salt water at 1,603 feet with an elevation of 578 feet compared with 569 feet elevation on the Seacord & Putnam well.

This shallow sand is known as the Cole sand in the Laredo district and was topped at minus 998 feet by Seacord and Putnam and minus 1,025 feet by Suttle, a difference of 27 feet.

Four New Tests

Four new tests are starting at once in the new territory which according to geologists is the same structurally as the Government Wells Pool production 3 miles south. Suttle's No. 1 Bennett is located 150 feet from the north and east lines of the southwest quarter of Survey 44, and Magnolia Petroleum Co. has made location for No. 1 Gilbert Wendt, 150 feet from the south and east lines of the northwest quarter of Survey 44, and location also for No. 1 J. T. Johnson 150 feet from the north and west lines of the southwest quarter of the northeast quarter of Survey 44.

The survey next west of No. 44 is No. 43 and Southwest Drilling Co. has made location for No. 1 R. Wendt, 150 feet from the south and east lines of Survey 43 and H. H. Coffied has made location for his No. 1 H. Wendt, 150 feet from the south and east lines of the northeast quarter of Survey No. 43.

There is also talk of another location on Survey 101 which corners Survey No. 44 on the northeast. Seven miles to the northeast, E. R. Thomas has made location for No. 1 Welder-Wood, 300 feet from the south and east lines of Survey 383. Two miles southwest of Thomas and in the direction of the Government Wells Field, William F. Morgan and later Al Buchanan drilled a group of tests on the Welder-Wood ranch with some encouraging showings in the Cole sand at around 1,500 feet. One of the Buchanan wells would have made several barrels and under normal conditions with a good price for oil would have made a commercial well.

Sarnosa Pool

At the south end of the Government Wells district where Smith & Capps brought in a new pool, called the Sarnosa Pool and classed by geologists as not being connected structurally with the Government Wells Field, three new tests are starting, Sun Oil Co. having spudded in and set surface casing on No. 1 Cano, a diagonal south offset in Survey 576 and Magnolia started rigging up on No. 1 M. Ruiz, a direct southeast offset, these survey lines being diagonal with the world. The Texas Company has spudded in No. 1 Ruiz, 150 feet from the northwest and northeast lines of Survey 127, a mile east of the Smith & Capps' discovery well.

The Government Wells territory promises at this time to be at once one of the most active in Southwest Texas. This territory gets its name from some water wells drilled by the United States Government many years ago for the benefit of ranch men during a dry time when cattle were starving to death and dying of thirst. The territory is reached by automobile south through Three Rivers in Live Oak County and on to San Diego in Jim Wells County and thence about 30 miles west through Alice to the field. It is also reached from the Mirando Field in the Laredo district, being about 25 miles north of Mirando City.

Other than the interests which brought in the discovery wells the concerns holding acreage that will be required to do drilling are The Texas Company, Sun Oil Co., and Magnolia Petroleum Co., all three with acreage in each of the new producing spots, Wright Brothers of San Diego, Tex.; Seacord & Putnam, of San Antonio; C. W. Hahl, of Houston; American Gas Co., of San Antonio; John F. Camp, of San Antonio; and Edwin M. Jones, of San Antonio.

Saxet Field in Nueces

Tule Lake Oil Co.'s No. 1 Hocker & Sevier at 4,074 feet came in late last week flowing at the rate of 600 bbls. daily for the first half hour. The test is in the north edge of the field and is a mile north of production in sand at that depth. It is the biggest initial production of any well completed in that sand there being four or five others. The test is 1,600 feet west of Neal, Milton & Kepley's No. 1 Roark that made an extra good showing on drill stem test at 4,823 feet but later, due to mechanical troubles, was never completed.

The other tests showing production at just less than 4,100 feet are in a string running east and west through the middle of the Saxet area and the new test is a mile north of the most easterly of the wells in that sand.

Farther west in the field, Rutherford's No. 1 Hunter made salt water at 4,807 feet on a test last week. It is an east offset to Gulf Coast Oil Co.'s No. 2 Sedwick which is one of a group of three wells producing at 4,560 feet, the only tests in that field producing at that depth. The whole Saxet Field is quite spotted so far as development is concerned and many sands have been proven productive with one or two or three wells and no additional efforts made to develop the sands.

Miss Sand in Starr

Edwin M. Jones' No. 1 Chatfield, the first test to reach the pay horizon in the new Rio Grande City Field, in southern Starr County, since the completion of the discovery well, was a failure at that depth—1,380 feet, and is now down around 2,000 feet and still drilling. It is 1,100 feet west of the discovery well. The discovery well is Heard & Heard's (now Sioux Oil Co.) No. 1 Goodrich. Sioux Oil Co.'s No. 2 Goodrich, a little south of the discovery well, has also passed the pay depth without getting production and the logs are said to run different. O. W. Killam drilled his No. 1 Woods, 2 miles southeast of the discovery well to around 2,500 feet and abandoned it more than a week ago.

There are some other tests rigged up and spudded in and some drilling in the Rio Grande City district but most of them have been lagging behind a little to see what happened first in the Killam and next in the Edwin M. Jones test.

In the Los Olmos shallow field, 8 miles northwest of Rio Grande City, there are several wells down to the shallow sand depth at around 500 feet but the field is still without pipe line connection and they have not been drilled in yet. Tarver & Nance have made arrangement to market the production from their wells in the shallow field and are trucking it to the railroad at Rio Grande City and shipping by rail. The first car was due to move out last week.

Starr County Wildcats

Wildcats over Starr County have been making hole but none have reported any important finds during the week though there was a rumor that Ryals Oil Corp., in a test in the western part of the county and about 4 miles north of Roma, had a good showing of oil at shallow depth.

In the Rio Grande City area, Tarver & Nance's No. 1 Guerra, immediately west of the city, drilled to around 2,500 feet and failing to find production plugged back to 2,146 feet where there was a good gas showing.

A recent storm up through the southernmost counties of Texas carried down a lot of derricks, 100 or more. Many wildcat tests have been delayed by derricks being blown down, the damage extending up into northern Duval County.

Balcones Fault Zone

In the Balcones Fault zone, C. J. Webster Oil & Gas Co. is working with No. 1 McCrory, the discovery well in a new pool between the Branyon on the southwest and Buchanan and Dale Pools on the northeast. The test was shot in the Buda section, which had shown a lot of oil when the well was being drilled. The casing had been set on top of the Edwards lime where it makes a small well of 60 to 100 bbls. There was no fear of water trouble and it was thought by shattering the casing in the Buda lime some additional production could be secured. In milling out the shattered casing the milling tool got caught but was later got out and the hole is being cleaned with a swedge and will be on the pump soon. Then the tools will be moved to No. 1 Robertson on the southwest.

Around Bob Rose's No. 1 Pierce, 2½ miles northwest of the town of Luling, three new tests are being started. Empire Gas & Fuel Co. has started an offset on the south. Bob Rose has started a test on the Walker lease next northeast of the Pierce lease and Cole and Mosely have started No. 1 Pierce at the north end of the Pierce 100-acre tract.

Darst Creek

In the Darst Creek Field, Sun and Humble have been closing up the gap between the new Camp production a mile southwest of the Darst Creek Field and the field. Humble has been making locations and bringing in wells northeast from the new production and Sun has made location and started No. 2 Dowdy, 500 feet from the north line and 700 feet from the west line of the Dowdy lease and southwest of No. 1 Dowdy which was the most southwestern producer in the field. If it makes a well the gap will be nearly closed.

The next most interesting wildcat in the Balcones now is the Sal Mar Oil & Gas Co.'s No. 1 Zunker, in the southeast corner of the Lewis Bollinger Survey and 15 miles southwest and on a line with the axis of the Luling Field and in a position to pick up a pool on the same general line. They are about ready to spud in.

Slick Pool

In the Slick Pool, in Goliad County, Slick-Seeligson's No. 2 Allen has been having trouble pulling the liner. It made a big gas well at 4,211 feet, making a little high gravity oil. Later it was determined to pull the liner and deepen and the well got loose and ran wild for four days but has been killed and a new effort is being made to pull the liner and it will be deepened a little to see if it can not be made into an oil well.

In the Saxet Field, Gulf Coast Oil Co.'s No. 1 Perkins & Gasse is still running wild, the derrick having been wrecked when it first started wild and with so much of a crater that probably nothing can be done.

SOUTHWEST TEXAS PROVEN AREAS

Week Ending May 28

YOST FIELD—BASTROP COUNTY

Campbell & Tong's No. 8 Yost, 300 ft. SE of No. 7 Yost, A. Garcia Sur. ..... T.D. 960 ft.; drlg.

COSDEN POOL—BEE COUNTY

Henderson Coquat's No. 1 Leroy Roberts, 300 ft. from W line of lease, 300 ft. N of NE cor. of Gremmel tract ..... Drlg. 4,058 ft.

NORMANNA POOL—BEE COUNTY

The Texas Co.'s No. 1 Scott, E of Normanna Field, 500 ft. N and W lines of lease in Jose Maria Uranga grant ..... T.D. 3,400 ft.; drlg.

PETTUS POOL—BEE COUNTY

Slick-Seeligson's No. 6 Ray, 400 ft. N of No. 3 Ray and 150 ft. from W line of lease and survey. ..... T.D. 2,100 ft.; drlg.
United Prod. Co.'s No. 42 Ray, near No. 31 Ray ..... T.D. 3,920 ft.; drlg.
United Prod. Co.'s No. 43 Ray, NE of field ..... T.D. 3,922 ft.; drlg.

COOKSEY POOL—BEXAR COUNTY

Chiquita Oil Co.'s No. 3 Pollock, 330 ft. from S line and N offset to Chiquitas No. 1 Hunter in J. W. Rialls Sur. ..... T.D. 1,530 ft.; bailing.

ECKERT POOL—BEXAR COUNTY

Alamo Nat. Gas Co.'s No. 3 J. H. Gembler, 130 ft. from N and E lines of tr. in A. Manachaca Sur. 51.. T.D. 1,216 ft.; drlg.
E. M. Carl's No. 1 F. Gembler, 160 ft. from N line, 750 ft. from E line of tract in J. Montes Sur. ..... T.D. 470 ft.; set csg.
F. H. Eckert & Son's No. 1 Louis Brehm, W offset to No. 3 John J. Brehm ..... Location.

GAS RIDGE—BEXAR COUNTY

American Gas Co.'s No. 5 W. H. Kennon, 1,750 ft. from S line, 2,000 ft. from E line of 400-acre tract in Maria F. Rodriges Sur. ..... T.D. 3,205 ft.; drlg.

DUNLOP POOL—CALDWELL COUNTY

Bob Rose's No. 1 Walker, 320 ft. from NW line 150 ft. from NE line of Walker lease, Solomon Seal Sur.. Location.
Cole et al's No. 1 Pierce, 400 ft. from NE line, 445 ft. from NW line of Pierce 100-ac. tract in Solomon Seal Sur. ..... Derrick on ground.
Empire Gas & Fuel Co.'s No. 1 Walker, direct S offset to Bob Rose's No. 1 Pierce in Solomon Seal Sur. ..... Rigging up.

(Continued on Page 74)

California Production Is Brought Down

Well Within the 500,000-Bbl. Mark and Further Reduction Expected. Basic Principles Adopted for Future Guidance

By L. P. Stockman

LOS ANGELES, Calif., May 28.—As the result of a revival in curtailment work and a readjustment in current daily allotments, crude oil production in California has been brought well down below the 500,000-bbl. mark and a further substantial reduction is anticipated. Due to substantial underages in the Ventura Avenue, Kettleman Hills and Mount Poso Fields, state production was reduced late this week to approximately the prescribed allowable of 476,700 bbls. per day, as the abnormal curtailment in these districts has offset the so-called unobtainable excess resulting from the consistent refusal of certain operators to curtail production in other fields. Ventura Avenue, with a prescribed allowable daily production of 40,000 bbls., was pinched back to approximately 30,000 bbls. early in March and has not been allowed to deviate for any great length of time. During April, production of the Ventura Avenue Field averaged 29,371 bbls. per day. The last figure available this week showed the field to be averaging 30,239 bbls. Mount Poso, with a rated potential of 18,990 bbls. and an allotment of 8,000 bbls., was producing 6,175 bbls. per day late this week. Due to a critical situation resulting from the inability of major companies to continue purchasing excess production because of inadequate storage facilities and an unwillingness to jeopardize their financial position, the proration committee found it necessary to issue an emergency order effective at noon May 23. Recognizing the urgency of the situation, field representatives of the Oil Producers Central Proration Committee immediately started a concerted movement to effect compliance with the prescribed allotments and thus remove the threatening possibility of a general breakdown in the existing price structure.

Under this temporary emergency measure, out of which is expected to emerge a permanent equitable plan of proration, the allowable daily production of the State was increased 20,000 bbls., the allotment being raised from 456,700 bbls. to 476,700 bbls. The allotment of Los Angeles Basin fields was increased 13,500 bbls. per day, the Coastal fields 3,000 bbls. per day and San Joaquin Valley fields 3,500 bbls. per day. Under the temporary emergency order, Long Beach was given a tentative daily allotment of 67,000 bbls., compared with 57,500 bbls. under the original curtailment schedule which contemplated limiting state production of crude oil to 456,700 bbls. per day. The allotment of Santa Fe Springs and Huntington Beach remained unchanged at 58,000 bbls. and 20,000 bbls. per day respectively. The allowable production of the Dominguez Field was stepped up from 13,650 bbls. to 15,000 bbls. per day, Playa Del Rey from 13,000 bbls. to 15,000 bbls., Richfield from 6,100 bbls. to 6,300 bbls., Rosecrans from 2,800 bbls. to 3,000 bbls. and Torrance from 6,000 bbls. to 6,250 bbls. In the Coastal district the daily allowable production of Elwood was increased from 11,000 bbls. to 14,000 bbls. and Ventura-Newhall from 3,700 bbls. to 3,800 bbls. The allotment of the Ventura Avenue Field, however, remained unchanged at 40,000 bbls. The only revision in the daily allotment of San Joaquin Valley fields was at Coalinga where the allowable was stepped up from 8,000 bbls. to 11,500 bbls.

Basic Principles

Previous to issuing its emergency measure, the executive committee and the Central Proration Committee tentatively adopted a statement of basic principles for future guidance. This tentative revision of some of the details of the California oil curtailment program, which was made in accordance with the accepted and established rules and procedure, provides that: (1) The oil curtailment program must not jeopardize the economic existence of marginal wells regardless of their ownership. Unless it permits the continued operation of such wells oil curtailment can be considered neither a true conservation measure nor an improvement on the law of supply and demand. So far as its production will permit, each average well should be assured of an income at least equal to its lowest cost of operation; (2) the economic minimum production of the average well should be the first and principal factor for the determination of its allotment and other factors such as potential, acreage, reserves and relative worth should be secondary thereto. That is, the ability of a well to curtail, which is generally proportional to its potential, should be considered before its ability to produce in determining its allotment. Likewise, with relative equal demand for its production, the allotment of a field should be established only after full consideration of the average minimum allotment required by its wells; (3) potential production should be subordinated to the minimum well allotment as a factor of allocation and should be subject to better definition and more methodical usage as a proration factor. It is now understood that the potential production of a well or property is not its maximum capacity during a short test but rather its normal production under uniform average producing conditions for a period of one month. Data obtained during flow tests of at least five days may be used in estimating the normal potential. It is recognized that the larger the well, the greater is the danger of error and inequity in using its potential as a factor of proration; (4) the production from line wells should be on a fair and equitable basis and any departure from the allotted production should be made only with the specific knowledge and consent of the adjacent operator and the umpire. The allotment of line wells will constitute the basis of judging the relative equity of production greater or less than the allotment. The allotment of one well or group can be transferred to another well or group in the same zone and field only with the approval of the umpire and all interested operators and only for the purpose of meeting competitive production or for operating efficiency; (5) recognition of oil production curtailment as a true conservation measure depends upon the adoption of procedure that will assure the greatest efficient recovery of oil from every field. Field and well allotments should not result in a wasteful dissipation nor in an inefficient utilization of the reservoir energy or material content of an oil sand. The allotments assigned flush fields and zones should be particularly considered in this respect; (6) it is realized that the rapid change of conditions in the California oil industry make it necessary that rules and their application undergo similar changes. It should be the constant aim of the oil umpire and the organizations and committees associated with him to constantly improve and develop curtailment procedure to the end that the co-operative limitation of production to demand will be generally recognized as an effective economic force and a stabilizer of industry.

Given Complete Authority

The Executive Committee for Equitable Curtailment completed its formation late last week and it was given complete authority to determine the percentage of curtailment necessary to be adopted by the operators in the State and to administer the allotment of the curtailment figures to the various fields and oil-producing districts. It is composed of three representatives of the Independent Petroleum Association, three of the Oil Producers Sales Agency and three from the Central Proration Committee, the latter chosen by the various field operators. As composed the Executive Committee is a complete cross section of the independent oil interests in the State. This group has asked that a representative be appointed from the Independent Oil Producers Agency of the San Joaquin Valley and will immediately elect three members not directly connected with the oil business but who will be representative of the people of the State.

Membership of the Executive Committee includes William Keck, chairman; Ralph B. Lloyd, vice chairman; W. H. Geis, secretary; R. A. Broomfield, R. R. Bush, John B. Elliott, P. H. Greer, H. Paul Grimm, V. R. G. Wilbur and Fred Owen. An emergency curtailment measure, which will serve as an immediate means of reducing production of crude oil and prevent further additions to storage, was prepared by the committee immediately upon its formation. The schedule provides for a minimum allotment to each well in the State. This minimum allotment is determined by using as a basis the productivity of the average producing wells in each of the various fields. The total production of any well is finally determined by first allowing the minimum production and then applying curtailment varying by fields from 25 to 76 per cent. Such a plan allows for the continued operation of the small wells in the State and places the burden of curtailment on the large wells, which are most capable of being curtailed. Chairman of the 13 field committees who make up the Central Proration Committee accepted the proposal soon after its preparation and have urged its immediate ratification upon their respective committee members.

Commenting on the present situation, R. E. Allen, assistant umpire, recently issued a statement to the effect that, "in common with many other basic industries, the California oil business has been profoundly affected by the economic readjustment the world has been experiencing during the past three years. In common also with other industries there has been a prolonged effort made to adjust the oil industry to the conditions which it faces. The most serious of these conditions is the notable decrease in demand for California oil and oil products. This lessened demand is evident in the Pacific Coast territory which is California's natural marketing district but is even more noticeable in the markets of Europe and the Atlantic Coast where the decline in the demand for California oil has been of such proportions as to cause a 52 per cent reduction in California oil shipments from July, 1930, to January, 1932.

"Recognizing the obvious absurdity of producing more oil than can be sold at the cost of production, the oil producers of California for the past three years

(Continued on Page 94)

TEMPORARY REVISION OF CALIFORNIA FIELD ALLOTMENTS EFFECTIVE MAY 23

	May, 1932		
	Actual potential	Tentative allotment	Number of wells
San Joaquin Valley—			
Belridge, deep	13,750	6,900	7
Belridge, shallow	3,850	1,600	290
Coalinga, west	8,435	6,000	822
Coalinga, east	24,165	5,500	682
Elk Hills	26,460	12,000	321
Fruitvale	11,600	3,800	43
Kern Front	14,280	7,000	323
Kern River	11,150	2,600	2,252
Kettleman Hills	285,000	60,000	34
Lost Hills	5,080	800	384
McKittrick	4,350	1,800	319
Midway-Maricopa	95,480	50,000	3,722
Mount Poso	18,990	8,000	121
Round Mountain, north	4,630	2,000	16
Round Mountain, south	10,140	0	36
Wheeler Ridge	530	500	34
Other fields	1,340	0	3
Total	539,230	168,500	9,410
Coastal District—			
Capitan	1,360	0	10
Elwood	19,600	14,000	59
Rincon	2,150	1,100	39
San Miguelito	600	400	2
Santa Barbara	350	350	5
Santa Maria	14,460	2,650	400
Summerland	150	150	110
Ventura Avenue	78,450	40,000	248
Ventura-Newhall	5,955	3,800	569
Watsonville	55	50	8
Total	123,120	62,500	1,450
Los Angeles Basin—			
Alamitos Heights	3,810	2,500	64
Brea-Olinda, Brea	11,900	6,450	153
Brea-Olinda, Olinda	4,570	1,980	265
Brea-Olinda, Puente	70	70	39
Dominguez, deep	25,350	9,430	22
Dominguez, shallow	8,650	5,570	63
East Coyote	3,340	1,700	96
Huntington Beach	35,100	20,000	538
Inglewood	18,475	14,400	247
Lawndale	350	350	7
Long Beach	98,000	67,000	1,098
Los Angeles	1,200	1,000	265
Montebello	7,250	6,500	196
Playa Del Rey	21,635	15,000	194
Potrero	1,100	800	12
Richfield	11,875	6,300	289
Rosecrans	5,300	3,000	87
Santa Fe Springs	96,400	58,000	653
Seal Beach	17,380	9,800	80
Torrance-Hermosa	10,075	6,250	587
West Coyote	16,625	8,500	135
Whittier	1,320	1,100	165
Other fields	75	0	5
Total	400,400	245,700	5,260
Grand total	1,062,750	476,700	16,120

Price Revision Expected in California

Believed Probability Following Ratification of Proposal to Reduce Production to Newly Established Allowable

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., May 28.—Despite a reduction of 1 cent per gallon in third structure gasoline this week in southern California territory the possibility of an upward revision in crude and refined oil prices in the near future became a probability this week when California operators ratified a proposal to reduce crude oil production to 476,700 bbls. per day and then proceeded to cut back production in conformity with the temporary emergency schedule issued by the Executive Committee for Equitable Curtailment. State production was within striking distance of the newly established allowable late this week and indications were the objective would be reached within the next few days. Several fields failed to reflect any additional curtailment during the week, but field chairmen in these areas expect to have some tangible evidence of additional curtailment shortly. In the Elwood Field, where production has been averaging around 16,500 bbls. per day, operators have succeeded in reaching the new allotment of 14,000 bbls. At Domingues, where operators were obliged to open production some time ago due to the insistence of lessors, production has been curtailed from approximately 31,000 bbls. per day to 16,500 bbls. This field has a maximum daily allotment of 15,000 bbls. and operators hope to reach this objective within a day or so. Santa Fe Springs was within 3,000 bbls. of its maximum daily allotment of 58,000 bbls. Kettleman Hills, with a pegged allotment of 60,000 bbls. per day, has been averaging 57,500 bbls. during the week. The net result of curtailment operations in California was a reduction of approximately 14,000 bbls. per day during the first week. Unless something unforeseen develops, the average daily production next week will be approximately 5,000 bbls. per day below the average for the current week.

Due to the pinching back of production in the Domingues Field, it appears probable the state's suit to prevent gas waste in that field will be dismissed by Superior Judge Edmonds without the formality of a decision when the case is again called at the expiration of the existing continuance. The pinching back of production has eliminated the waste of gas with the result that there is no need for a judicial decision or the granting of an injunction under present conditions. This is of interest in view of the decision of operators in the Dominguez Field to suspend drilling operations upon the conclusion of work now under way. So far as the majors are concerned there are two incompleted wells which should be completed in the third Callender zone in the near future and one or two other wells are being reconditioned. The suspension of work by J. E. O'Donnell on No. 2 Domingues a few weeks ago leaves one other well to be finished. This is Republic Petroleum Co.'s No. 1 Childs, which many petroleum engineers give only an outside chance of developing commercial production due to its rather unfavorable location on the structure. The Union made a preliminary production test of No. 18 Hellman early in the week but subsequently killed it because of water trouble.

Kettleman Gas Suit

Hearing will be resumed in the Superior Court at Hanford June 7 on the State's suit to enjoin operators in that field from further waste of gas. There has not been any court action for more than a month as Judge Strother acceded to the request of operators some time ago for a continuance to enable them to work out an equitable method of reducing the production of gas with a consequent reduction in the amount blown to the air. If a satisfactory program has been worked out, it is not improbable Judge Strother may hold his decision in abeyance pending further developments. James S. Bennett, special counsel for the Department of Natural Resources, is making preparations to press this action for a judicial decision. Counsel for the Department of Natural Resources will offer for consideration of the court certain modifications providing for (1) a tolerance for release to the air not exceeding 20,000 feet of dry gas for each barrel of oil produced; (2) a gas-oil ratio not exceeding 5,000 feet where a well enters the Temblor more than 6,050 feet below sea level; (3) a gas-oil ratio not exceeding 10,000 feet where the well enters the Temblor less than 6,050 feet below sea level and is open to production from the fifth zone, i.e., lower 400 feet of Temblor; (4) a gas-oil ratio not exceeding 20,000 feet where the well enters the Temblor less than 6,050 feet below sea level, is open to production below the second zone, and is not open to the fifth zone; (5) restraining any production at a gas oil ratio above 20,000 feet from any zone until all the gas produced below 20,000 feet in excess of the tolerance is utilized, and then allowing production at ratios above 20,000 feet only to the extent that there is a demand for use, and then only from the first and second zones.

This restraint on production of gas at ratios above 20,000 feet to a barrel of oil will continue only so long as the production of gas at lower ratios is limited to the quantity necessary to produce oil at the rate of 4,000 bbls. to a quarter section within drilling distance of 8,000 feet below sea level to the Temblor or the fractional part of 4,000 bbls. that the surface area in acres within drilling distance of 8,000 feet below sea level to the Temblor within a quarter section bears to 160 acres; (6) providing for fittings with a test pressure of 3,000 pounds and a working pressure of 1,500 pounds above a master gate which has a test pressure of 6,000 pounds and a working pressure of 3,000 pounds; (7) modification of the time within which reports may be made; (8) restatement of certain definitions; (9) elimination of the provision that all wells be drilled 1,000 feet into the Temblor; (10) such other provisions as the court may find necessary in order equitably to distribute the burden of curtailed production incident to preventing unreasonable waste of gas.

Kettleman Operations

The Associated Oil Co. failed to develop commercial production from the formation above the upper Variegated zone and is accordingly pulling the 4¾-inch liner and will resume drilling at 7,535 feet. The Kettleman North Dome Association, which should finish two potential producers some time during the next few weeks, picked up the top of the Temblor in No. 36-30-J at 8,081 feet and is rotating at 8,150 feet. No. 58-20-J, in the extreme western end of the structure between the blue and the red lines denoting proven and potential acreage, is being delayed with mechanical trouble at 8,313 feet but the Association's field department expects to effect a complete recovery in the near future. West of this well, Standard's No. 67-19-J, which is likewise between the blue and the red lines, picked up the top of the brown shale at 6,361 feet and is rotating at 6,575 feet. North Kettleman Oil & Gas Co.'s No. 1 Lillis Welsh, out beyond the blue line, has just passed the 5,100-foot level and, while good footage has been made, drilling will begin to slow down somewhat as depth is reached. This well, which will extend the proven limits of the North Dome approximately 2 miles if commercial production is developed, should reach the interesting stage within 60 days, although it will not reach the tentative completion depth until late in the summer. North American has reached 9,500 feet in No. 1 Elsinore, an edge well in Section 36-21-17, but is not expected to be given a production test immediately. In the Middle Dome, Standard has reached the 8,000-foot level in No. 6-29-V, an offset to No. 1 Burbank of Petroleum Securities, which has been held up for several months with mechanical trouble at 9,332 feet. Standard's well in the Middle Dome registered commercial production on a preliminary production test late in April. It is being deepened and will probably be completed around the 9,000-foot level. Universal Consolidated Oil Co. has just about completed preparations to spud in No. 1 Bunting, a new well to be drilled in the Middle Dome in Section 25-23-18.

Belridge Oil Co. has resumed work on No. 64-27, a deep test in the North Belridge Field of Kern County, following a suspension of several days, and the crew is making preparations to give this deep test a conclusion production test in the near future. This well, in Section 27-27-20, came in prematurely a few weeks ago flowing approximately 25,000,000 feet of gas and an undetermined quantity of light oil from 8,056 feet. This well looks good for approximately 3,000 bbls. per day, although when the production is turned into the traps after completion it may vary. Despite the excellent showing, none of the other operators in the North Belridge Field has made any definite plans to engage in deep zone exploitation. This decision to retard drilling operations is in conformity with the expressed desire of all major companies to keep drilling operations down to the lowest point possible, at least until conditions improve. Major companies have engaged in very little development work during the entire year to date and if this condition prevails for another few months, drilling operations in California during 1932 will be substantially below last year. Casa Mira Oil Co. has material on ground for a new

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	May 14, 1932 — Total this week	May 14, 1932 — Daily average	May 7, 1932 — Total last week	May 7, 1932 — Daily average	This year to date	Same time last year
Intercoastal-Domestic—						
Diesel and gas oil	.....	.....	.....	.....	116,890	882,230
Gasoline	229,554	32,793	339,630	48,519	2,752,532	5,757,262
Kerosene	.....	.....	23,150	3,307	103,895	41,512
Foreign Exports—						
Crude oil	120,822	17,260	102,148	14,593	3,233,202	2,634,256
Fuel oil	86,177	12,311	122,666	17,524	3,681,121	5,799,276
Diesel and gas oil	93,413	13,345	52,329	7,476	907,477	1,439,610
Gasoline	178,590	25,513	546,274	78,039	2,767,614	3,816,204
Kerosene	.....	.....	111,336	15,905	835,407	596,136
Lubricants	.....	.....	.....	.....	.....	18,978
Naphtha distillates	.....	.....	34,250	4,893	75,425	.....
Coastwise-Domestic—						
Crude oil	314,384	44,912	261,841	37,406	5,441,334	8,501,343
Fuel oil	155,969	22,281	205,897	29,414	5,239,904	5,394,695
Diesel and gas oil	19,254	2,751	66,151	9,450	604,767	619,486
Gasoline	344,403	49,200	547,021	78,146	5,882,517	4,797,819
Kerosene	4,792	685	6,548	935	68,347	147,041
Naphtha distillates	.....	.....	.....	.....	.....	4,952

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-Domestic—						
Diesel and gas oil	.....	.....	80,225	11,461	151,220	.....
Gasoline	.....	.....	.....	.....	293,455	267,499
Lubricants	.....	.....	.....	.....	15,824	14,015
Foreign Exports—						
Crude oil	.....	.....	57,114	8,159	635,420	77,556
Fuel oil	.....	.....	.....	.....	521,659	452,255
Diesel and gas oil	.....	.....	.....	.....	352,107	232,283
Gasoline	.....	.....	.....	.....	1,410,916	1,503,894
Kerosene	.....	.....	.....	.....	340,042	313,061
Lubricants	.....	.....	.....	.....	20,584	.....
Coastwise-Domestic—						
Fuel oil	156,955	22,426	77,402	11,057	1,998,439	1,606,307
Diesel and gas oil	9,177	1,311	.....	.....	196,281	88,756
Gasoline	7,411	1,059	163,748	23,393	1,323,946	1,140,413
Kerosene	.....	.....	8,007	1,144	44,285	110,439

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.	T.	R.	Depth	Status
Hines Pet., No. 1 Ocean Park, Los Angeles Co.	9-	2-	15	7,414	suspended
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12-	2-	15	6,233	suspended
Co-operative Dev. Co., No. 1 Del Rey, Los Angeles Co.	26-	2-	15	1,682	sd. sh. drilling
Lawndale Pioneers Inc., No. 1 Peck, Los Angeles Co.	20-	3-	14	6,378	suspended
Barcus, W. L., No. 1 Watson, Los Angeles Co.	28-	4-	13	rig	rigged up
Baldwin Oil Co., No. 9 Inglewood, Los Angeles Co.	7-	2-	14	3,980	reaming
Baldwin Hills Synd., No. 1 Inglewood, Los Angeles Co.	17-	2-	14	4,090	suspended
Rucker & Croul, No. 2 Puente, Los Angeles Co.	27-	2-	10	2,200	suspended
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30-	2-	9	2,700	suspended
Jones, W. L., No. 1 Bell, Los Angeles Co.	31-	2-	12	1,593	suspended
Weist Oil Co., No. 1 Montebello, Los Angeles Co	34-	1-	11	4,902	suspended
Blinn & Gray, No. 1 Montebello, Los Angeles Co.	6-	2-	11	5,060	suspended
Wardell & Menichini, No. 1 Montebello, Los Angeles Co.	7-	2-	11	304	suspended
Yellowstone Oil Co., No. 1 Alhambra, Los Angeles Co.	24-	1-	13	2,919	suspended
Rucker, L. W., No. 1 Calabassas, Los Angeles Co.	26-	1-	17	1,004	abandoning
Caballero Estates, No. 1 Calabassas, Los Angeles Co.	23-	1-	16	1,571	gr. sd. drilling
Marble, Willard, No. 1 Chatsworth, Los Angeles Co.	6-	3-	16	1,395	suspended
Ball, W. T., No. 1 Newhall, Los Angeles Co.	24-	3-	16	1,111	sd. sh. drilling
Ajax Pet., No. 1 Newport, Orange Co.	21-	6-	10	7,259	suspended
Nuoil Co., No. 1 Newport, Orange Co.	29-	6-	10	1,970	cleaning out material
Buena Park Oil Co., No. 1 Buena Park, Orange Co.	34-	3-	11	....	
Orangethorpe Pet., No. 1 Bros, Orange Co.	32-	3-	10	1,701	sd. sh. drilling
Beck, Alfred, No. 1 Corona, Riverside Co.	4-	4-	6	1,110	suspended
Spindletop Oil Co., No. 1 Salton Sea, Riverside Co.	25-	7-	10	3,590	suspended
Duncan, N. L., No. 1 Sagebrush, Riverside Co.	8-	4-	8	1,157	suspended
Colan Dev. Co., No. 1 Redlands, San Bernardino Co.	25-	1-	2	3,392	sidetracking
Mason Oil Co., No. 1 Salton Sea, Imperial Co.	1-	17-	15	666	sd. sh. drilling
Woods, D. H., No. 1 Salton Sea, Imperial Co.	7-	11-	16	761	sd. sh. drilling
Borderland Oil Co., No. 2 Encinitas, San Diego Co.	29-	16-	4	2,677	repair eqpmt.
South Bay Oil Co., No. 1 Border, San Diego Co.	31-	18-	2	1,343	suspended
Itasca Pet. Co., No. 1 Mesa, San Diego Co.	33-	18-	1	1,701	cleaning out
Oklahoma Oil Corp., No. 1 Palms, San Diego Co.	26-	11-	8	1,888	redrilling
Shannon, G. H., No. 1 Kearney, San Diego Co.	14-	15-	3	446	suspended

rig on the Theta property in Section 29-28-20 and tentative plans call for the initiation of drilling before June 15.

Fruitvale

The Fruitvale Field of Kern County took a new lease on life during the week as the result of increased development and a further gain is anticipated. Due to the rapidity with which these wells are completed the aggregate number of strings in operation is sometimes misleading and consequently appears lower than is actually the case. Western Gulf Oil Co. spudded in No. 1 Harty, a new well in Section 21-29-27, and in less than 10 days has made 2,830 feet of hole, including the landing and cementing of surface pipe. This well, which should be completed around the 3,800-foot level, will probably be tanking oil before the middle of June. Western Gulf's No. 2 Price Stewart is standing cemented at 3,740 feet, but will probably be drilled out during the next few days. Doyle Petroleum Co. recompleted No. 1 Haberfelde in the Fruitvale Field and it was returned to production flowing 396 bbls. of clean 21.9 gravity oil per day from 4,143 feet, the hole having been finished with a 4-inch liner carrying 140 feet of perforated. Bankline Oil Co., which has been experiencing some little difficulty with No. 1 Fairhaven, is swabbing for production at 4,044 feet. The company has started rigging up rotary equipment for No. 2-B, to be drilled in Section 21-29-27. Treasure Oil Co., which has also experienced mechanical trouble in its drilling operations in this field, is reconditioning No. 1 Knowles, bottomed at 3,640 feet, this work having been necessitated because of a defective 8⅝-inch water string. Herb L. Whiston has just about completed rigging up rotary equipment for a new well in Section 23-29-27 and spud is expected within a few days. Mohawk recemented its No. 10 Fairhaven at 4,100 feet early in the week and should list this well for completion shortly. In addition to wells already under way in this field, Petrol Corp. has staked location for No. 1 Bloemer, and the Tarr & McComb Oil Co. has staked location for a new well in Section 23-29-27.

Round Mountain

Judging by the construction of three new rigs and taking of one new location, Round Mountain Field of Kern County will witness a little revival of drilling during the next few months. The new location this week was No. 1 Valencia of the Kern Petroleum Corp. in Section 5-28-29. The new rigs erected were No. 1 Coffee of Chanslor-Canfield Midway Oil Co. in Section 1-28-28, and California Western Oil Co.'s Nos. 10 and 11 in Section 7-28-29. The latter company added a new well to its producers in the Round Mountain Field during the week when No. 8 in Section 7-28-29 was completed pumping 303 bbls. of 16.4 gravity oil per day from 1,590 feet. Helm and Bailey, who recently acquired Harry Failing's No. 1 Coffee, standing shut in since August 14, 1931, have recompleted this well pumping 525 bbls. of 15.8 gravity oil per day from 1,761 feet. Coffee Oil Co. has taken over Reynolds Oil Co.'s initial project in Section 6-28-29 and the hole is being cleaned out preparatory to being redrilled and deepened.

The Mount Poso Field of Kern County, which has been extremely quiet for several years, showed one new well started and one completion during the past week. The new well finished was Modoc Petroleum Corp.'s No. 1 Vedder in Section 28-26-28. This well, bottomed at 1,535 feet and finished with a 6⅝-inch liner carrying 50 feet of perforated, was brought in pumping 175 bbls. of 16.3 gravity oil cutting 10 per cent. The new well started was Gulf Verde Oil Co.'s No. 1-A Glide in Section 19-27-28. In the Midway-Sunset Field Goldman & Simms have material on ground for a second well to be drilled in Section 22-32-23. Republic Petroleum has reached 2,800 feet in its No. 35-A, Section 7-32-23, and it should be completed within three weeks. Fred Turner, who has acquired the Bull property of Cypress Petroleum in Section 22-32-23, has started rig construction for a new well. Out in the west front of the Kern River Field, Chanslor-Canfield Midway Oil Co. has material on ground for a new well designated as No. 42, to be drilled in Section 23-28-27.

Inglewood

The most interesting development in connection with drilling and production activities in the Inglewood Field is the probability of increased drilling during the next few months. Because of the existence of deeper horizons operators have looked with disfavor on any proposal to drill new wells in this area. Work projected at present does not come under this classification, for the reason that those holding potentially productive acreage realize the necessity of caution and will not precipitate a general deepening campaign. The fact remains that one and possibly two or three wells will be drilled into the second zone if Baldwin Oil Co. succeeds in developing commercial production in No. 9 Brownmoor, along the edge of the structure. Pacific Western Oil Co. has already staked location for No. 16 Rubel, a new well, but has not yet placed any material on the ground. In the event that No. 9 Brownmoor fails to get substantial production, it is doubtful if either No. 16 Rubel or any of the other projected wells will be drilled. Based on the results obtained in the upper zone, No. 9 Brownmoor is not expected to show unusually large production, although the initial may be somewhat higher than anticipated. The Brownmoor property is right on the edge of the structure and is consequently expected to show edgewater within a relatively short time unless production is kept severely beaned back. Standard Oil Co. completed No. 69 on Los Angeles Investment Lease No. 1 early in the week, pumping 130 bbls. of 19.8 gravity oil cutting 10 per cent from 1,900 feet.

Seal Beach

The Standard Oil Co. completed No. 25 San Gabriel in the Seal Beach Field, doing 675 bbls. of clean 28.2 gravity oil per day on a compressor. This well, bottomed at 6,020 feet with a 9-inch water string landed and cemented at 5,950 feet, was shut in as a conservation measure and will probably not be back on production until normal production declines to where it can be produced without causing an excess of the field's allotment. Continental Oil Co. is building a new rig for No. 34 Bixby, but this will not be spudded in for a couple of weeks. In the West Coyote Field, the Standard has material on ground for Nos. 111 and 112, two new wells to be drilled on the Murphy Coyote property. Standard's drilling operations in this field are in conformity with lease requirements and not because of any desire to stimulate production. Over half of Standard's wells in the West Coyote Field are shut down because of curtailment. The company is meeting its allowable daily production from the deep zone, which, because of the existing low price for crude oil, is justified in view of the lower lifting cost. Standard's drilling operations, while relatively limited, serve a double purpose of keeping a few drilling crews on the current payroll. In Potrero Field, Sidney Cole's No. 1 Murphy started flowing at the rate of 200 bbls. per day early in the week when 4¾-inch casing was perforated at 6,300-90 feet, but it is problematical whether this well will hold up as the output is cutting approximately 50 per cent water.

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S. T. R.	Depth	Status—
Standard, No. 1 Santa Rosa Island, Santa Barbara Co.	.....	mtl.	building rig
Barnsdall, No. 1 Los Alamos, Santa Barbara Co.	31- 8-33	4,404	br. sh. drilling
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	9,303	hd. sd. drilling
Wilson, N. S., No. 1 Los Alamos, Santa Barbara Co.	2- 7-35	4,979	suspended
Equity Oil Co., No. 1 Coal Oil Point, Santa Barbara Co.	24- 4-29	2,110	redrilling
Bolsa Chica, No. 2 Coal Oil Point, Santa Barbara Co.	25- 4-29	....	location
Cuyama Oil Co., No. 1 Cuyama, Santa Barbara Co.	12-10-27	rig	rigged up
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,245	suspended
The Texas Co., No. 1 Carpinteria, Santa Barbara Co.	33- 4-25	1,044	sd. sh. drilling
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
Woodrow Pet., No. 1 Miguelito, Ventura Co.	4- 3-24	2,463	sd. sh. drilling
Bell, H. H., No. 1 South Mountain, Ventura Co.	23- 3-21	2,484	suspended
Wilshire Oil Co., No. 1 Sulphur Mountain, Ventura Co.	28- 4-21	....	grading
Superior Oil Co., No. 1 Timber Canyon, Ventura Co	13- 4-21	....	grading
Magu Synd., No. 1 Oxnard, Ventura Co.	17- 1-25	5,812	fish for D.P.
American Oil Co., No. 1 Conejo, Ventura Co.	33- 2-20	1,590	cleaning out
Graham & Loftus, No. 1 Goose Lake, Kern Co.	20-27-22	6,619	plug 5,250 ft.
General Pet., No. 1 Buttonwillow, Kern Co.	6-28-23	3,094	suspended
Wilshire Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	7,000	plug 4,350 ft.
Milham Expl. Co., No. 14 Buttonwillow, Kern Co.	7-28-23	2,411	br. sh. drilling
Purman, T. H., No. 1 McKittrick, Kern Co.	22-29-21	3,963	circulating
Welport Oil Co., No. 8 McKittrick, Kern Co.	36-29-21	1,298	recemented
Welport Oil Co., No. 2 McKittrick, Kern Co.	19-29-21	316	sd. drilling
General Pet., No. 1 Belridge, Kern Co.	30-28-21	8,260	suspended
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	4,222	suspended
Rio Grande, No. 1 Shale Hills, Kern Co.	7-27-19	1,000	sd. sh. drilling
Rio Cal Pet., No. 1 Shale Hills, Kern Co.	2-27-18	2,355	suspended
Fullerton Oil Co., No. 6 Semitropic, Kern Co.	14-27-23	2,600	abandoning
Fullerton Oil Co., No. 7 Semitropic, Kern Co.	1-27-23	....	location
Cumberland Oil Co., No. 2 Devil's Den, Kern Co.	17-26-18	3,225	suspended
Hannah, Tom, No. 1 Devil's Den, Kern Co.	26-25-18	3,200	resume work
Gauthier, C. B., No. 1 Devil's Den, Kern Co.	24-25-19	388	sd. sh. drilling
Fowler, F., No. 1 Blackwell Corner, Kern Co.	15-26-19	1,198	suspended
Regina Oil Corp., No. 2 Mojave, Kern Co.	26-10-14	2,790	cleaning out
Meridian Oil Co., No. 1 Mojave, Kern Co.	11- 9-15	4,000	suspended
Harding, J. B., No. 1 Mojave, Kern Co.	5-10-10	1,030	redrilling
Barnsdall Oil Co., No. 1 Tejon, Kern Co.	15-11-20	6,500	reaming
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	6,025	suspended
Descanso Oil Co., No. 1 Tejon, Kern Co.	31-11-19	2,749	suspended
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	6,197	suspended
Kingsburg Expl. Co., No. 1 Kingsburg, Fresno Co.	30-16-23	2,880	sd. sh. drilling
Kent & McDonald, No. 1 Carrizo Plains, S. Luis Obispo Co.	3-32-22	2,693	redrilling
Emerich Oil Co., No. 1 Carrizo Plains, San Luis Obispo Co.	32-32-22	1,320	suspended
Trav-El Oil Co., No. 1 Carrizo Plains, San Luis Obispo Co.	7-32-22	2,450	cleaning out
Indian Dome Oil Co., No. 1 Edna, San Luis Obispo Co.	26-31-12	3,352	suspended
Martin, J. D., No. 1 Edna, San Luis Obispo Co.	5-31-13	3,070	suspended
Paso Robles Oil Co., No. 1 Edna, San Luis Obispo Co.	27-27-11	4,191	suspended
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	1-29-12	1,650	suspended
Pacific Inland, well No. 1, Monterey Co.	19-23-15	2,340	to set pipe
Brown, W. F., No. 1 Parkfield, Monterey Co.	15-23-14	1,051	suspended
Guess, E. E., No. 1 Corcoran, Kings Co.	7-21-21	6,197	suspended
Woodward, Glen, No. 1 Dudley Ridge, Kings Co.	32-22-20	569	sd. sh. drilling
Scott Bros. Drlg. Co., No. 1 Dudley Ridge, Kings Co.	18-22-19	689	sd. sh. drilling
Lacal Natural Gas Co., No. 1 Dudley Ridge, Kings Co.	32-22-20	541	sd. sh. drilling
Kettleman Natural Gas Co., No. 1 Dudley Ridge, Kings Co.	18-22-19	1,100	suspended
Irma Investment Co., No. 2 Dudley Ridge, Kings Co.	7-22-20	1,224	suspended
Dudley Dome Oil Co., No. 1 Dudley Ridge, Kings Co.	9-22-20	332	sd. sh. drilling
Eagle Oil Co., No. 1 Dudley Ridge, Kings Co.	15-22-20	1,125	gas, shut in
Eagle Oil Co., No. 2 Dudley Ridge, Kings Co.	15-22-20	911	suspended
Tulare Basin Gas Co., No. 2 Dudley Ridge, Kings Co.	2-22-19	rig	suspended
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-22-17	5,894	cleaning out
Kettleman Ridge Oil Co., No. 1 Avenal, Kings Co.	10-22-16	1,148	testing
Magee & Stone, No. 1 Alpaugh, Kings Co.	34-24-22	3,858	sd. sh. drilling
Guess, E. B., No. 3 Dudley Ridge, Kings Co.	12-22-22	1,840	testing
Ingraham, R. H., No. 1 Porterville, Tulare Co.	24-22-27	....	location
Ducor Pet. Co., No. 1 Ducor, Tulare Co.	14-24-27	2,200	suspended
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,092	suspended
Gravity Expl. Co., No. 1 Alpaugh, Tulare Co.	11-24-23	2,207	suspended
Ellis & Sanford, No. 1 Tulare Lake, Tulare Co.	20-24-23	1,920	suspended
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-15-17	7,694	suspended
Napa Oil Co., No. 1 Griffith, Napa Co.	7- 8- 3	2,848	cleaning out
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-16- 4	1,040	suspended
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3- 2-10	4,750	suspended
Hilderbrandt, R., No. 1 Crows Landing, Stanislaus Co.	36- 6- 7	1,130	suspended
Rushing Oil Co., No. 1 Waterford, Stanislaus Co.	20- 3-12	2,594	sd. sh. drilling
Pacific Northern Oil Co., No. 1 Guinda, Yolo County	23-12- 3	2,670	sd. sh. drilling
Easton & Monell, No. 1 Colma, San Mateo Co.	25- 3- 6	3,124	sd. sh. drilling

REVIVAL OF FIELD OPERATIONS IN NEW YORK STATE GAS AREAS

By Special Correspondent

CORNING, N. Y., May 28.—The Hammondsport Natural Gas Co., with 20,000 acres under lease in the neighborhood of Chili, Monroe County, New York, and about 10 miles southwest of the city of Rochester, is drilling a test on the Moffett farm. It is said to be the first test for gas in Monroe County, although tests have been drilled and gas fields developed in various other parts of western New York not far back from Lakes Erie and Ontario. Medina sandstone is expected to be found at about 600 feet and that sand is the objective. The well was started with a 13-inch hole and will end up with a 6¼-inch hole. George M. Layman, an official of the Hammondsport Natural Gas Co. says another test will be drilled on the big block, to the Oswego and possibly to the Trenton formation.

The Seaboard Power & Light Co., headed by well known oil men, has been incorporated in New York State and plans to explore several thousand acres of gas leases in Seneca County. Among the directors are Philo A. Johnson and Roy L. Williams of Bradford, Pa., and Robert M. McDowell of Elmira, N. Y.

New Wells in Old Field

Atwell Bookmiller of Gaines, Pa., grandson of the late E. M. Atwell, has drilled three oil wells recently on the Atwell farm in the old Gaines Field between Gaines and Watrous, in Tioga County, Pennsylvania. This is the most easterly oil field in the United States. The oil is of the Pennsylvania grade and is sold to one of the large refineries. The three wells started off on the pump at 10 bbls. per day after having been shot, but will settle to 6-bbl. wells. Bookmiller plans to drill two other wells in the field. The late E. M. Atwell was one of the pioneers in the Gaines Field, which the general public had long since thought completely drilled up.

The Allegany Gas Co., after drilling a year on the test on the Davey farm near Mansfield, Tioga County, Pennsylvania, has abandoned the hole. The well was more than a mile deep.

A test on the Carmon farm near Hammondsport, N. Y., has been abandoned as a failure and the rig is being taken to a location on the Perry farm, just southeast of Altay, in Schuyler County.

Expensive Tests Get Nothing

The Lycoming Natural Gas Co.'s No. 1 Ida B. Wheeler in Delmar Township, Tioga County, looks like a failure at a depth of 5,597 feet. Top of the Oriskany sand was found at 5,522 feet in this well and the bit passed out of it at 5,584 feet. The sand was broken by several shale and limestone strata. This is the third test on the Wellsboro anticline. The two others were dry and abandoned. Three wells are shut down at depths of 5,581, 5,490 and 5,506 feet respectively.

In the Farmington area, which is a part of the proven Tioga gas field, the Allegany Gas Co. is cleaning out No. 1 Palmer, a gas well, at 4,010 feet. The North Branch Development Co. is near completion on No. 1 Murray in Lawrence Township. The Mutual Natural Gas Co. is building rig on the Murray farm in Lawrence Township.

In Potter County the East Penn Development Co. is straightening a crooked hole at 5,350 feet in No. 1 Emporium Lumber Co. tract in the East Fork district. The Potter Development Co. is building rig for a test on the Matteson farm in Hebron Township. Several other wells are drilling in the Hebron area but are not at depths that make them interesting.

Preparations are being made to develop

(Continued on Page 70)

Revived Activity in Greasewood Area

Dry Creek Dome Well Increases Its Production. Another Test in State of Washington. Hobbs Pool Wells Are Being Regauged

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., May 30.—All wells in the Hobbs Pool are being regauged to establish new potentials for proration purposes. Two new locations in the southern part of the pool were made by the Midwest Refining Co. A location near Roswell in Chaves County was made by R. D. Compton; Harding County is to have another test for carbon dioxide gas and a 4,500-foot test in Curry County is reported.

Northeastern Colorado is showing increased activity with one location made for a joint well in the Greasewood Pool and contracts signed for a joint test by Ramsey and others in the New Raymer district. Continental Oil Co. will buy Greasewood production; Reiter-Foster Oil Corp. has been granted an extension on its drilling requirements; and negotiations are reported pending for a test southeast of Fort Morgan.

Wyoming had no completions. Three wells are being started in the Byron-Garland district in Big Horn County and three locations were made in the Osage Field.

Ohio Oil Co.'s No. 2 Montana Industrial, on the Dry Creek Dome, has increased its output to 1,300 bbls. per day of 52 gravity oil. The Texas Company announced a location on its block northeast of the gas wells in the Cut Bank Field. A small well was completed in the South Pondera Field and a good show of gas was reported near Laurel.

Another test in Washington was announced and a show for 3,000,000 feet of gas was reported in Clallam County.

NEW MEXICO

Curry County

Southwest Oil Production Co. of Texas is reported to have contracted for a 4,500-foot test in Section 15-5n-33, in the center of a block of 20,000 acres. It is 21 miles northwest of Clovis.

Lea County

A much lower potential, more in line with the actual capacity of the field than the present allowable of 30,500 bbls., probably will be established as soon as a regauging of wells now under way is completed. This gauge is being made through tubing and about one-third of the wells have so far been tested. The older wells are expected to show a substantial decline from their original potential as some have been producing for more than two years.

Midwest Refining Co.'s No. 8 Terry, C NW SW, Section 10-19-38, reported a completion at 4,175 feet, and estimated at 1,000 bbls., is ready to be tested to establish its potential.

Two new locations made by Midwest, No. 26 State, C SE NE, Section 9-19-38, an inside well in the southern part of the field, and No. 29 Turner, C SE NW, Section 34-18-38, an outside well, one location east of its No. 8 Turner. Midwest's No. 29 State, C SW SW, Section 10-19-38, is bottomed at 4,180 feet and is getting ready to test.

Amerada Petroleum Corp.'s No. 1 Hardin, SW cor., Section 18-18-38, in the northern part of the field, is drilling at 3,900 feet in anhydrite and lime. Texas Pacific Coal & Oil Co.'s No. 3-G State, C SE, Section 24-18-37, is bottomed at 2,810 feet in anhydrite and cemented 9-inch at 2,808 feet with 400 sacks. Midwest Refining Co.'s No. 11 Byers, C NE NE, Section 4-19-38, spudded on May 18.

The Texas Company's No. 3-A State, C Lot 2, Section 2-21-33, Lea district, is digging cellar. This well, north of Lea Pool and between it and The Texas Company's No. 1 Lynch, will be carried to the top of the anhydrite with rotary tools and then standardized.

Eddy County

Flynn, Welch & Yates' No. 62 State, NW cor. SE, Section 10-19-28, Artesia district, shut down at 1,000 feet in gypsum and red shale since December, is preparing to resume. Leonard & Levers' No. 7 State-Levers, C SW SE, Section 20-17-29, Jackson area, is drilling at 775 feet in anhydrite. It bottomed the salt at 625 feet. W. A. Scott's No. 1 Kaiser, NW SE, Section 7-18-27, Compton area, is drilling at 500 feet in gypsum and red shale. It encountered a gas pocket at 395-400 feet.

Avalon Oil Co.'s No. 1 State, NE cor. SE, Section 26-20-27, southwest of Getty Pool, reached its contract depth of 1,000 feet and shut down for orders. It will be temporarily abandoned until conditions improve. New Mexico Oil Syndicate's No. 1 McClelland, SW NW NE, Section 22-22-23, 25 miles west of Carlsbad, is moving in materials. Portland, Ore., interests are back of this test with H. A. Stebinger in charge as trustee.

Chaves County

R. D. Compton is preparing to drill a test west of Pecos River and a half mile northwest of the New Mexico Military Institute at Roswell in his No. 1 Emerson, SW SW SE, Section 20-10s-24. The area east and southeast has been prospected extensively, but no test has been drilled in the immediate vicinity. Warman Oil Trust's No. 1 Evans, N half, Section 15-14s-25, Blackdom district, was drilled to 1,230 feet in lime and plugged back to 1,168 feet and shot with 40 quarts at 1,150-60 feet without results. It probably will be drilled deeper.

DeBaca County

Matador Oil Co.'s No. 1 Woods, NE SW SW, Section 6-4n-20, Salada Creek, is preparing to resume at 4,662 feet after installing a new boiler.

Harding County

Carbon Dioxide Corp., of Denver, is reported to have spudded in its No. 1 William Tinsley, Section 31-21n-31, Bueyeros district. This is in the same general area where Kummbaca Oil & Gas Co.'s No. 1 Kerline, NW cor. SE, Section 34-16-30, gauged 3,654,000 feet per day of carbon dioxide gas at 940-73 feet, a year ago.

San Juan County

Continental Oil Co.'s No. 17, C NE, Section 2-29-19, Rattlesnake Dome, discovery well in the Pennsylvanian, recently deepened to 6,985 feet, has cemented pipe at 6,505 feet with 250 sacks. No. 24, SW NW SW, Section 1-29-19, second deep test, is bottomed at 7,370 feet and preparing to fish out some iron.

R. C. Oswell's No. 2, NW NW, Section 34-30-11w, Aztec district, which came in last December at 1,430 feet, total depth, as a small producer, has been cleaned out, put on the pump and completed. It is making 15 to 25 bbls. of very high gravity oil per day.

COLORADO

Weld-Morgan Counties

With announcement of one new location in Greasewood Pool and signing of contracts for another deep test in the New Raymer district, northeastern Colorado again is showing considerable activity, comparable with last year's drilling campaign. One important factor developed during the week was the final clearing up of difficulties which have held back development of Platte Valley Petroleum Co.'s acreage in Greasewood Pool. Reiter-Foster Oil Corp., which held first call on all oil produced on Platte Valley acreage in Section 13, 24 and 25-6n-61 and 18, 19 and 30-6n-60, has released Platte Valley company from this feature. Platte Valley company has contracted this oil to Continental Oil Co., which will continue to take the production from the Reiter-Foster producing well. This paved the way for development of the Henry Niles tract comprising 320 acres in the E half, Section 13-6n-61, which offsets on the east Continental Oil Co.'s No. 1 Briggs, one of the most attractive tracts. All litigation involving title has been settled. A four-way agreement has been concluded whereby a test will be drilled at once. Manning & Terry, drilling contractors, acquired a one-fourth interest and will drill the well, No. 1 Niles, C SE NE, Section 13-6n-61. Continental Oil Co., which will furnish rig and drilling equipment from its No. 1 Gadbois, and other considerations, will have a one-fourth interest. Platte Valley Petroleum Co. will have a one-fourth interest and the first well will be free to the company. The fourth interest will be owned by a Chicago syndicate which put up $30,000. The deal provides for a joint operating agreement with each party furnishing its one-fourth of the cost for developing the tract, except for the Platte Valley interest in the first well.

No. 1 Niles is a half mile east of Continental's No. 1 Briggs, most northerly producer in the pool, and about the same distance south and a little west of the test to be drilled by Ohio Oil Co. on the Butters tract. Geological work done since last year's campaign was completed, has strengthened the theory the pool trends northeast and that No. 1 Niles is higher than the producing wells and No. 1 Butters nearer the top than the Niles location.

Ohio Oil Co.'s No. 1 Butters, C SW SW, Section 7-6n-60, in Morgan County, is building derrick. Rotary rig from the Golden Dome in Montana will be moved in as soon as the well now being plugged back is completed or abandoned. Contrary to reports, it is understood the Ohio company will drill this location at once without waiting for completion of No. 1 Niles. Rocky Mountain Drilling Co. has the contract.

Platte Valley Petroleum Co. has granted Reiter-Foster Oil Corp. a six months' extension of its drilling agreement on the latter's No. 1 William Wilson, C NE SE, Section 24-6n-61, standing at 440 feet since last winter. The small machine over the well is being moved to Yuma County. It is reported Reiter-Foster paid $3,500 for the extension and is working out plans to go ahead with its contract with the Platte Valley company.

Continental Oil Co.'s No. 1 Gadbois, C SE SW, Section 24-6n-61, on the southern edge of the pool, completed a few months ago as a small producer, is preparing to plug and abandon. Production had dropped to less than 5 bbls. per day. The rig will be used by Manning & Terry to drill No. 1 Niles in Section 13.

Contracts have been signed for another test in the New Raymer district to be drilled jointly by Danciger Oil & Refining Co., Ramsey Brothers, of Oklahoma, and an unidentified party. Location has not yet been released, but it is expected to be approximately 5 miles south and a half mile east of the Tulsa-Fort Morgan well. Two possible locations mentioned in recent reports are N half, Section 14-7n-59, or Section 19-7n-58.

Tulsa-Fort Morgan Oil Co.'s No. 1 Anthes, C NE NE, Section 24-8n-59, New Raymer district, cemented 15½-inch on bottom at 1,050 feet for a water shutoff and is preparing to resume.

Weld Royalties Co.'s No. 1 Ella Peters, SE SE SE, Section 28-9n-61, 6 miles west of Keota in Weld County, is rigging up and scheduled to begin spudding May 29.

Fred W. Freeman, formerly head of the Rocky Mountain division of The Texas Company, is reported negotiating for a test on the Clem Lee and Doctor Lusby block, southeast of Fort Morgan. There are about 11,000 acres in the block and extensive core drilling was done by Midwest Refining Co. to work out the structure.

Yuma County

Ira L. Keith and associates are moving a spudding machine from No. 1 Wilson in the Greasewood Field to southern Yuma County to be used in cleaning out the four gas wells drilled a number of years ago by Midfields Oil Co. The wells will be put into condition for producing and other wells will be drilled. These interests recently acquired franchises to supply Yuma, Wray and Eckley with gas.

Arapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE, Section 7-4s-66, near Aurora, was drilled to 6,090 feet when operations were temporarily suspended. Shows of oil and gas at the bottom of the hole were in evidence when work ceased.

Adams County

Hills Dome Oil Lease Development's No. 1 Hills, SE cor., Section 27-3s-64, is shut down at 4,025 feet.

Fremont County

Canon Heights Oil Co.'s No. 2 Harding, NW SE NW, Section 21-18-70, Orchard Park, was drilled to 3,415 feet, approximately 130 feet in the red beds. More water was encountered at 3,100-25 feet and the well will be abandoned.

Larimer County

Mayer Oil Co.'s No. 1 Reed, SW NW, Section 28-4n-69, Berthoud district, is fishing at 3,800 feet.

Park County

South Park Oil & Gas Co.'s No. 1 Esche, SE cor. NW, Section 5-9s-76, Muleshoe Dome, is resuming at 2,465 feet. Drillers claim that at this depth it is still in the Dakota sand with enough oil showing to coat the slush pit and considerable gas. Water stood about 1,800 feet in the hole and very little came in when it was bailed down to 1,000 feet. This water is believed to be from back of the 8¼-inch which parted. The oil is green and high grade and apparently different from the show in the Muddy which was cased off. It is estimated to be 50 to 60 feet off the Lakota. A spear is in the hole and if this cannot be recovered it will be sidetracked.

South Park Oil Co.'s No. 1 Milligan, NE cor. SE, Section 13-8s-76, Jefferson district, cemented cave at total depth of 2,912 feet.

Rio Blanco County

Magnolia Petroleum Co.'s No. 1 Maddock, C NW SE, Section 9-2s-96, Piceance Creek, shut down for the winter at 2,936 feet, is resuming. The 6⅝-inch was cemented at 2,914 feet, above the gas sand, with 150 sacks. It will be completed as a gas well. It gauged 13,000,000 feet in 24 hours. Owners of leases and permits covering 61,000 acres operate under a unit agreement which includes the royalty owners and the structure is 100 per cent unitized. No decision has yet been announced as to whether another well will be drilled, but if it is decided to go ahead, the next test probably will be on the Bellis permit in the E half, Section 15.

The California Co.'s No. 1 California-Raven, NW SE, Section 30-2n-102, Rangely Dome, is drilling at 5,212 feet.

WYOMING

Converse County

Continental Oil Co.'s No. 30 Glenrock

Sheep, SW SE SE, Section 4-33-76, Big Muddy, a rotary operation to the Lakota, is rigged and ready to spud. Ohio Oil Co.'s No. 1 Kinney, SE SW SE, Section 4-33-76, a west offset to the Continental well, is building rig. Converse Oil & Gas Co.'s No. 1 Carlson, C SW SW, Section 27-33-73, west of Douglas, is drilling at 2,100 feet.

Weston County

Federal Oil Co.'s No. 2, CEL NE SE, Section 15-46-64, in the vicinity of several good producers in the Osage Field, is drilling at 1,940 feet and is a near completion. Central Oil Co. has a standard rig on location for its No. 1, NE cor. SW, Section 15-46-64, and Charles F. Marten's No. 17, CNL NW SE, Section 19-46-64, in the eastern part of the field, is rigging up. Carl Cundy's No. 3, NE NW NE, Section 31-46-63, is rigging up, and Lambie Oil Co.'s No. 8 Bock, SW cor. NW, Section 14-46-64, is rigging. Julius Peters and others' No. 1 Witzell, SE cor. NW, Section 30-46-64, Fiddler Creek, is drilling in brown shale at 3,840 feet.

Big Horn County

Lovell Dome Association's No. 1 Sheets, Lot 2 (SE SE), Section 9-55-96, southeast of Byron, has material on location. B. E. Parrish has the contract. Garland Syndicate's No. 1 Denio, Tract 43-C, Section 15-55-97, south of the shallow wells on the Byron Dome, recently taken over from the Wisconsin Holding Co., is cleaning out at 600 feet to resume after being idle several years. Taylor Oil Co.'s No. 1 Hoskins, Lot 5, SE SE, Section 25-56-97, Byron district, is building rig. This will be a rotary operation.

Fremont County

Ward Oil & Gas Co.'s No. 2, NE cor., Section 28-34-90, 300 feet from No. 1, which was lost at 2,600 feet, has derrick completed. This is a rotary test and will begin spudding about June 1.

Sublet County

Ogden-LaBarge Oil Co.'s No. 1, SE, Lot 2, Section 18-27-113, northeast of production in the LaBarge Field, shut down for the winter at 6,300 feet, is preparing to resume under the direction of Ed Douglas. It was reported showing some gas. Six hundred feet of pipe was dropped shortly before operations were suspended.

Carbon County

Sinclair Prairie Oil Co.'s No. 1, SE SE SW, Section 29-27-89, Bunker Hill, is drilling at 6,554 feet in broken sandy shale. It is supposed to be nearing the Sundance.

Natrona County

Lakota Oil & Gas Co.'s No. 4, SW NW, Section 31-37-81, North Casper Creek, is cleaning out to resume at 710 feet. Jarvis & McDonald's No. 1 Government, SE cor., Section 31-30-81, Spindletop Dome, is drilling below 800 feet.

MONTANA

Teton County

California Co.'s No. 1 Sullivan, NW NE NW, Section 34-27-7w, Bynum district, is drilling at 2,820 feet.

Carbon County

Ohio Oil Co.'s No. 2 Montana Industrial, C NW SE, Section 11-7s-21, about the center of the Dry Creek Field, is proving to be a much better well than first indicated. It is bottomed at 5,488 feet and producing from the Lakota. In an 18-hour test following completion it made 722 bbls. in 24 hours. Subsequently it increased to 50 bbls. per hour of 52 gravity oil through a nine-sixteenths-inch bean and at last reports was making 1,300 bbls. per day. Ohio's No. 1 Caldwell, CEL NE SE, Section 12-7s-21, is drilling in the second Frontier at 4,390 feet and showing considerable gas and some oil, and its No. 2 Robinson, C SE SE, Section 3-7s-21, is drilling at 4,628 feet in shale above the second Frontier. Ohio's No. 1 Bowman, C SE NE, Section 4-7s-21, is rigging up.

Carbon Oil & Gas Co.'s No. 1 McMinn, NW SW SW, Section 7-7s-22, is shut down at 4,479 feet with a good show of gas in the second Frontier. Same company's No. 1 Armstrong, SW cor. NW, Section 7-7s-22, is testing shut off after cementing bottom to shut off bottom water. Ohio Oil Co.'s No. 1 Kuchinski, NW SE NE, Section 15-7s-22, Golden Dome, which was a disappointment at a total depth of 6,660 feet in the Morrison, is plugging. Rig will be shipped to Colorado for an operation in the Greasewood Field.

Toole County

The Texas Company has announced a location in the Cut Bank Field in its No. 1 International Land Co., 200 feet north of the CSL SW, Section 6-36n-4w. This is across the line in Toole County, northeast of the Cut Bank gas wells in Glacier County and southwest of Kevin-Sunburst Field. The location is in the center of a block held by the company. The contract has been awarded to C. C. Operating Co., controlled by A. E. Crumley, drilling contractor of Oilmont.

Oregon Oil Syndicate's No. 1 Barthelote, SW NE SE, Section 20-36-2e, Barthelote district, is bottomed at 2,580 feet and plugging back to test a show of gas at about 2,200 feet. Askalta Oil Co.'s No. 3 Farbo, SE SW NE, Section 2-37-4w, Buckley-Border Field, is drilling at 250 feet with 15½-inch at 75 feet. This is a west offset to its No. 2 Farbo, a producer.

Phillips County

St. Cloud Oil & Gas Co.'s No. 1, SW NE, Section 20-24n-24, is a rig. It will drill for gas in the Eagle sandstone. The surface is Judith River. Several years ago Ohio Oil Co. drilled in the NW SW NW, Section 21-24-24, to the Kootenai at a total depth of 2,035 feet and found the sands water bearing.

Musselshell County

Laffea Oil Co.'s No. 2, NE NW SE, Section 6-10n-25, Devil's Basin, is shut down for orders at 1,120 feet. It had water in the base of the Kootenai at 1,058 feet and the 3½-inch is about 100 feet off bottom.

Sweetgrass County

Shoshone Consolidated Oil Co.'s No. 1 N. P., NW SW, Section 23-2n-15e, Hamilton Coulee, which spudded in 1927 and was shut down for the winter at 5,785 feet in the base of the Frontier, has resumed and is fishing for tools.

Golden Valley County

Golden Valley Oil Co.'s No. 1, SW SE, Section 26-6n-22, Belmont district, is drilling at 3,160 feet below the base of the Kootenai at 3,052 feet. It had salt water in the first Frontier at 1,815-35 feet.

Glacier County

R. C. Tarrant's No. 1 Hogland, NW cor. SW, Section 13-34-6w, Cut Bank district, is on top of the objective sand at 2,835 feet and fishing for underreamer lugs. It cut sands at 2,695-2,745 feet and 2,760-90 feet. The latter had a small show of oil.

Pondera County

Teton Corp.'s No. 3 Jones, C NW NE, Section 17-27-4w, South Pondera, is reported a completion at 2,008 feet and estimated at 50 bbls. per day. Bell & Adams' No. 1 Venetz, NE SE NE, Section 31-27-3w, is drilling at 950 feet with the 10-inch showing at 430 feet.

Liberty County

Western Natural Gas Co. is moving in for its No. 2 Hicks, CWL NW NE, Section 27-37-4e, Whitlash district, a west offset to its No. 1 Hicks, which was completed several months ago at 1,813 feet for 20 bbls. per day.

Yellowstone County

Spokane-Laurel Oil Co.'s No. 1 Nutting, SW cor. SE, Section 30-2s-24, Laurel district, encountered a flow of gas at 580 feet which lifted the casing and damaged the derrick and rig. The 10-inch froze when it dropped back. It may be necessary to skid the rig and start a new hole. Flow of gas was not gauged, but probably is better than 1,000,000 feet per day. Peter Antolnilli's No. 1, NW cor. NE, Section 21-2n-25, Happy Hollow, is preparing to resume at 2,470 feet. The 5-7/16-inch will be run and carried.

SOUTH DAKOTA

Chadron-Osage Oil Co.'s No. 1, NE cor. SW, Section 6-12s-6e, Moody Dome, Fall River County, is drilling at 1,940 feet and feeling for the Muddy. Wy-Tex Oil Co.'s No. 1, Section 32-8n-1e, Oak Creek Dome, Butte County, is ready to spud. This location previously was given as in Section 32-54-60, on the Wyoming side.

IDAHO

Boise Petroleum Co.'s No. 1 Pence, SE NE SW, Section 13-8n-4w, Big Willow district, is drilling at 1,500 feet after casing off a small show of gas at 1,250 feet.

WASHINGTON

Mordello L. Vincent and others' No. 1 Olympic, NW SW, Section 9-28n-14w, Quillayute Prairie district, Clallam County, encountered a second show of gas at around 3,000 feet. It was estimated at 3,000,000 feet per day. First show was in sandy shale at 2,300-40 feet and amounted to around 1,000,000 feet. Same interests have made a location for a rotary test on Section 9-28n-13w, on the Forks Prairie structure, half a mile north of a well drilled by the Washington Oil Co. 20 years ago which showed for about 20 bbls. per day at 1,915-50 feet. Both of these tests are on structures worked out with the torsion balance.

Vesta Oil Co.'s No. 1, Section 5-15-7, Gray's Harbor County, which has been standing at 1,500 feet for some time with a show of gas, is preparing to make a test. R. E. Henderson, representing undisclosed principals is backing the test. Sufficient gas is brought up in the bailer to burn. There was also a small show of free oil.

Ohio Oil Co.'s No. 1-A Robinson, Section 5-17n-9w, Aberdeen-Hoquiam district, is about ready to spud. This is a rotary operation.

Turner Valley Gas Order Suspended

Temporary Injunction Restrains Conservation Board Pending Appeal. Will Proceed With Test of First Area

By Victor Lauriston

Staff Correspondent, Canadian Fields

CHATHAM, Ontario, May 28.—The Turner Valley Gas Conservation Board has temporarily suspended its order restricting the gas flow of the Turner Valley Field to an aggregate slightly less than 200,000,000 feet a day. This step was taken by the board after Spooner Oils, Ltd., and Richfield Petroleums, Ltd., secured from Mr. Justice Ewing an interim injunction restraining the board from restricting the wet gas flow from the Spooner and Richfield wells.

In support of the injunction it was claimed by the applicants that under the conservation order the potential naphtha recovery from the Spooner wells, which was 87 bbls. a day in December and 23 bbls. a day last month, was estimated at 4.7 bbls.; and that this restriction would interfere with the company's contracts for crude naphtha delivery.

Evidence given by Frank P. Fisher, technical advisor of the conservation board, showed, for the period since 1925, the following gas yield, utilization and wastage from the Turner Valley Field in thousand feet:

	Gas		
Year—	Yield (m.c.f.)	Used (m.c.f.)	Wastage (m.c.f.)
1926	8,000,000	4,000,000	4,000,000
1927	13,870,000	5,350,000	8,520,000
1928	21,320,000	7,390,000	13,930,000
1929	61,000,000	16,000,000	45,000,000
1930	114,000,000	16,000,000	97,000,000
1931	169,000,000	12,480,000	156,800,000

According to Mr. Fisher's evidence, the cost of drilling a well in Turner Valley averaged about $186,000. With conservation, under actual testing conditions crude naphtha production had exceeded the board's estimates; one well cited, estimated 3.7 bbls. a day, having produced 32 bbls. a day under actual test. It was claimed that gas export, with a view to utilizing the wastage, could be seriously taken up only after the field had been shut in and tested.

Mr. Justice Ewing set June 6 for hearing the case in the Alberta Supreme Court; an injunction being granted in the interim. As the test case will presumably be carried to the privy council it may be several months before a final decision is reached. The entire validity of the legislation constituting the conservation board is challenged by the companies.

Following the decision of Mr. Justice Ewing, the board issued the following statement announcing suspension of its order:

"Owing to the fact that in the action brought by Spooner Oils, Ltd., an injunction has been granted restraining the board from enforcing its Order No. 1 against this company, the board feels that it must leave the question of compliance with the terms of this order by other companies to their discretion until decision of the trial judge is handed down.

"In the meantime the board is desirous, if no objection is raised, of proceeding with its test of the first area in the field so as to cause no delay in case of decision favorable to the board given by the court. The question of restriction of gas flow under Order No. 1 is not involved in this test."

South Turner Valley

In the far south end of the Turner Valley Field, A. H. Mayland and associates are reported to have resumed work on Rand Petroleums' No. 1, S half, LSD 5, Section 34-18-2w5. This location is immediately north of Merland Oil Co.'s No. 1, which in April delivered an average of close to 180 bbls. a day from the deep lime. Rand Petroleums, Ltd., of Calgary held the original acreage in Section 34, as well as portions of Sections 11, 12 and 32, holdings totaling 300 acres. The test was started several years ago by Vanberta Oils, Ltd., of Vancouver, British Columbia, as Vanberta's No. 2, the company's No. 1 test on the Black Diamond structure having previously been abandoned at 850 feet. Vanberta Oils carried the test to only 100 feet, at which depth it was standing when taken over by Mr. Mayland. The test has since been drilled to below 300 feet, cable tools being used.

In the same area, Mar-Jon-Freehold's No. 1, LSD 9, Section 28-18-2w5, has resumed drilling at 3,570 feet after changing from cable to rotary equipment. Union Drilling Co. of Calgary has the contract, with William Maughan in charge. This is the farthest south test now active in the Turner Valley Field.

Border Fields

On the Twin River structure southeast of Lethbridge, Parco Oil Co.'s No. 1, LSD 16, Section 34-1-20w4, is shut in and conducting casing pressure tests following a second shot in the top of the lime at 3,890 feet. The two shots have apparently failed to increase the initial pumping production of around 10 bbls. a day.

On the Alberta end of the international Reserve Dome structure, Mayland Southern's No. 1, LSD 13, Section 4-1-9w4, is reported again drilling below 2,750 feet, after the winter shutdown. The test is a commercial gasser and is being continued

to around 3,100 feet to test a potential oil sand.

Kebo Lake Test

So far, there has been no resumption of work on Hudson's Bay Oil & Gas Co.'s No. 1 Kebo, in LSD 2, Section 17-11-22w4, in the Kebo Lake district. The test is regarded as the most promising oil prospect in the southern Alberta area. Last fall it got a good show of high grade crude in the top of the Madison lime at 4,920 feet, but later had to cement back to about 4,800 feet to make a successful shut off of water from the Sunburst sand and facilitate sidetracking of lost tools. The well is now standing in readiness to drill into the producing horizon, but no definite plans for this year's work have been announced. The company is reported to have renewed its agreements with adjacent landowners for a period of two years, and it is definitely stated by R. Van A. Mills, vice president and general manager, that the well will ultimately be completed.

Abandon Paintearth Test

Definite abandonment of Hudson's Bay Oil & Gas Co.'s No. 1 Paintearth, LSD 5, Section 27-39-14w4, is indicated by the fact that the Sheldon Burden Co. of Canada is moving away its rotary equipment. The test, started by the Hudson's Bay Oil & Gas Co. a couple of years ago, was carried to 4,675 feet. Unofficial reports credited the test with good shows of both gas and oil at various horizons, but it ultimately drilled into a heavy water flow, and has been standing for a considerable time pending a decision as to whether it should be carried deeper. The location was in the previously untested Castor district, considerably southeast of Edmonton.

East Central Alberta

In the Ribstone Field, Ribstone Oils, Ltd., is rebuilding derrick for its test near McLaughlin. The test has been standing for over a year and derrick was recently destroyed by fire.

Maple Leaf Oil Co., of Vancouver, British Columbia, which owns two producing gas wells in the Wainwright Field, has been formally registered in Alberta. L. Y. Cairns of Edmonton will be Alberta attorney for the company. Gas production from the Maple Leaf wells is distributed in the town of Wainwright by the Wainwright Gas Co.

Fulton Test Resuming

On the Montana side, Sheldon Burden Co. is reported rigging up rotary equipment for deepening the unfinished Fulton Oil Co. Milk River well, which will be completed by the Frye interests of Seattle, Wash. The new owners are reported to have secured considerable additional acreage.

Saskatchewan Leasing

The Saskatchewan natural resources department at Regina is reported to be receiving many applications for oil and gas leases, the leasing activity this year being quite up to normal. Acreage secured is chiefly along the western or Alberta boundary of the province, between Battleford and the international boundary.

British Columbia Drilling

In British Columbia, announcement was made recently that Patrick Syndicate's No. 1 on the Australian ranch in the Cariboo district will be deepened this season. The test has been standing for some months around 1,400 feet, and was reported a couple of years ago to have got a fair show of crude oil which was apparently not improved by deeper drilling.

In the Kelowna district, Okanagan Oil & Gas Co.'s No. 1, Section 2-26-Osoyoos Survey, is reported temporarily shut down at 2,520 feet. The test got a strong water flow around 1,900 feet and a short distance below this entered a marine limestone formation. The latter appears to be free of water but traces of oil indicate that it may be a commercial oil horizon.

Ontario Drilling

In the D'Clute Field, Kent County, Ontario, Union Gas Co.'s No. 20, Lot 21, Concession 10, Raleigh Township, is drilling around 1,680 feet with about 40,000 feet of gas. The test will be continued through the lime. The gas comes from a number of horizons, as in the Olga group of wells which are about 2 miles farther north in Raleigh Township. The test is 4 miles north of the nearest producer in the D'Clute Field.

In the Dawn Field, Lambton County, Union Gas Co.'s No. 61, NW Lot 28, Concession 2, Dawn Township, is reported around 1,100 feet and running 6⅝-inch casing.

In Euphemia Township, Lambton Oil & Gas Syndicate is reported to have located No. 3 test about 500 feet west of No. 1, which was in SW Lot 28, Concession 9. No. 1 has been cleaned out and is reported again in production from the shallow oil horizon at 308 feet. Lambton's No. 2, drilled about 530 feet east and 100 feet south of No. 1 was abandoned at 415 feet after getting only a small show and the syndicate has decided to test in other directions from the discovery well.

TIOGA FIELD

(Continued from Page 67)

new gas fields in Schuyler and Yates Counties, New York. The coming of warm summer weather is bringing renewed activity. In the town of Reading, Francis A. Haughey of Watkins Glen, who drilled a "sour" gas well last year in the town of Tyrone, states that his interests are planning to make a location within 10 days. It is understood that Watkins Glen and Ithaca capital will back the project. Another hole, a short distance from Reading towards Altay, will be drilled by Hammondsport parties.

Possibilities of natural gas close to Dundee is shown by the results of shooting a completed well near the Dundee water tank. A charge of 40 quarts of nitroglycerin resulted in a small amount of gas flowing steadily from the hole. A larger shot will be placed in the well with the hope of increasing the flow. This well is owned by the Dundee Gas Associates, Inc.

John F. Carpenter, Dundee gas operator, who has played a prominent part in the development of the Wayne-Tyrone natural gas fields announced today that the Dundee Gas Associates had established a new location on the Huff farm in Starkey Township, 3 miles north of Dundee. Drilling operations on this new location will begin in a few days.

Work Near Penn Yan

Joseph Sanderson who drilled on his farm just outside the village of Penn Yan announced a new location today 800 feet northeast from the old well. The well drilled last summer produced only shale gas. Spudding on this site is expected to be completed within a few days.

E. J. DeGolier who drilled numerous wells for the Tri-State Gas & Electric Co. is back in Wayne for the summer. He is drilling on the E. J. Look farm near Wayne. Spudding has been completed.

The Pentoga Gas Co. of Elmira has established a new location near Wayne.

The Belmont-Quadrangle completed a 1,500,000-foot well in the town of Tyrone the past week on land owned by the Federal Land Bank of Springfield, Mass. A dry hole was completed the past week on the DeLos Bailey farm in the town of Barrington, Yates County.

DEATH OF NORMAN M. ESTEY

Norman M. Estey, 60 years old, died in Tulsa on Wednesday, May 25. He had been engaged in the oil business in the Breckenridge and Wichita Falls districts in Texas; in the Jennings Field in Oklahoma, and in Kansas. Mr. Estey had been in ill health several years.

CANADIAN GAS ASSOCIATION

CHATHAM, Ontario, May 28.—The Canadian Gas Association representing the artificial gas industry of the Dominion will hold its twenty-fifth annual convention at Winnipeg, Manitoba, on June 9 and 10.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 56)

Humble O. & R. Co. and Gulf Prod. Co.'s No. 3-B Lockwood & Sharp, J. Rabb Sur., 1,000 ft. from E line and 300 ft. from N line of Tr. 1 (935.75 ac.)..Location.
Humble O. & R. Co. and Gulf Prod. Co.'s No. 4 George, J. Rabb Sur., 3,000 ft. E. 333 ft. S of NW cor. of 200-ac. tr. ..Location.
Humble O. & R. Co. and Gulf Prod. Co.'s No. 1-B George, J. Rabb Sur., 1,950 ft. from W line, 350 ft. from N line of tr. ..Drlg. shale 1,774 ft.
The Texas Co.'s No. 1 Wolters (M. H. Gubbels), Samuel Kennedy Sur., 742 ft. from W line, 100 ft. from S line of 100-ac. tract ..Drlg. gumbo 1,196 ft.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 28 Cade, N. Fitzsimmons Sur., 600 ft. S, 150 ft. E from No. 26..Drlg. sand and lime 4,525 ft.
Yount Lee Oil Co.'s No. 29 Cade, N. Fitzsimmons Sur., 300 ft. E of No. 27 and 240 ft. N of No. 16 ..Drlg. hard sand 3,312 ft.
Yount Lee Oil Co.'s No. 1 Broussard & Orme, 300 ft. E of N cor. of N. Fitzsimmons Sur., in Martin Dunman Sur. ..T.D. 6,415 ft; D.S. stuck; sidetracked at 5,186 ft; drilled sand and shale 5,350 ft.
Yount Lee Oil Co.'s No. 2 Broussard & Orme, Martin Duman Sur., 300 ft. SE of No. 1 ..Location.
Yount Lee Oil Co.'s No. 11 Smith, Martin Dunman Sur., 130 ft. E of No. 3 and 440 ft. N of No. 5 ..Drlg. gumbo 800 ft.
Yount Lee Oil Co.'s No. 2 Nellie League, Martin Dunman Sur., 330 ft. N of No. 1 and 300 ft. E ..Spudded.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 137-A ..Sand 590-633 ft; tested S.W.

HUMBLE—HARRIS COUNTY

Cullen & West's No. 4 Burt, J. B. Stevenson Sur., 50 ft. NW of No. 3 in line with No. 2 ..Tested S.W. 4,826 ft; pulling screen to deepen.
J. D. Clay's No. 1 Bender, Robert Dunman Sur., 200 ft. from W line and 100 ft. from S line of 100-acre tract ..Sand and lime 1,165 ft.
Rio Bravo Oil Co.'s No. 1 fee, 200 ft. from N line, 50 ft. from W line, Blk. 4, Bender South Addn., W. D. Adams Sur. (W.O.) ..Coring sandy shale 3,733 ft.
Sun Oil Co.'s No. 53 River, Robt. Dunman Sur., 1,100 ft. from S line tract ..Comp. pumping 20 bbls. net oil 1,328 ft.
Sun Oil Co.'s No. 55 River, Robt. Dunman Sur., 50 ft. from E line, 495 ft. from S line of tr. ..Drlg. shale 1,106 ft.
The Texas Co.'s No. 26 House, Mary Owens Sur., 100 ft. W of No. 20 ..Rig.
The Texas Co.'s No. 25 Wheeler & Pickens, 200 ft. N, 50 ft. E of SW cor., Lot 24, J. B. Stevenson Sur. ...Drlg. hard sand 1,562 ft.
E. M. Wilson's No. 9 W.&P.-Texas fee, 40 ft. out of NW cor., Blk. 25, J. B. Stevenson Sur. ..Drlg. shale 905 ft.

PIERCE JUNCTION—HARRIS COUNTY

Abercrombie & Harrison's No. 2 Ritter (D.D.), Jas. Hamilton Sur. No. 51 ..Set 90 ft. screen 4,654 ft; tested S.W; pulling screen to deepen.
Anderson & Plummer's No. 7 Whitehead, Jas. Hamilton Sur. No. 51, 248 ft. S of No. 4 and 304 ft. from E line ..Drlg salt 4,555 ft; top of salt 3,235 ft.
Rio Bravo Oil Co.'s No. 7-A Settegast (D.D.), Jos. Kopman Sur. No. 44, 1,400 ft. NW along NE line from SE cor. "A" lease and 100 ft. SW at right angles...Abd. 4,272 ft.
Rio Bravo Oil Co.'s No. 24-A Settegast, J. Kopman Sur. No. 44, 1,900 ft. S and 200 ft. W of NE cor. of "A" lease ..Swbng. 4,516 ft.
Rio Bravo Oil Co.'s No. 25-A Settegast, J. Kopman Sur. No. 44 (location check to come) ..Derrick.

MYKAWA—HARRIS COUNTY

F. R. Flannigan et al's No. 2 Minnetex, 125 ft. from W line and 100 ft. from S line, Lot 251, Wm. J. Lovett Sur. ..Drlg. shale 4,546 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Co.'s No. 20 Esperson, C. W. Fisher Sur., 471 ft. from W line and 510 ft. N of No. 5 Esperson ..No report.
Cranfill-Reynolds Co.'s No. 5 Davis (D.D.), Kakernut Sur., 150 ft. from S line, 1,197 ft. from E line of tract ..No report.
Cranfill-Reynolds Co.'s No. 9 Moore's Bluff, M. Duncan Sur., 500 ft. S of N line of Moore's Bluff tract in line with No. 6 Davis and No. 6 Moore's Bluff ..Location.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 16 Boyt (location to come) ..Location.

SOUTH LIBERTY—LIBERTY COUNTY

The Texas Company's No. 2 Pickett (D.D.), M. G. White Sur., 350 ft. W and 62 ft. S from NE cor. of 12.2-acre tract ..Washing down 3,536 ft.

HULL—LIBERTY COUNTY

Eclipse Oil Co., No. 2 Barrow, Jesse Devore Sur., 55 ft. W, 35 ft. S of most easterly NE cor. 1.7-ac. tract....Drlg. 200 ft.
Hannah Oil Co.'s No. 1 Hannah, Jesse DeVore Sur., 100 ft. W of The Texas Co.'s No. 1 Hannah ..Spudded.
D. & L. Prod. Co. and Bashara Oil Co.'s No. 1 Perito, Jesse Devore Sur., 34½ ft. from E line and 30 ft. from N line of 5-acre strip ..T.D. 4,553 ft; csg. collapsed.
D. & L. Prod. Co.'s No. 2 Mecom & Layton, Jesse DeVore Sur., 30 ft. from S line, 60 ft. from W line of 3-ac. tr. ..Rigging up.
Republic Prod. Co.'s No. 61 Dolbear (W.O.) ..Sand showing oil 1,427-1,625 ft.

MARKHAM—MATAGORDA COUNTY

Claude Hamill et al's No. 2 Northern Irrigation Co., I.&G.N. Sur., Blk. 9, Sec. 5, 50 ft. NW of No. 1.....Drlg. shale 5,395 ft.
E. M. Hamill's No. 3 Meyers, Wm. Hadden Sur., 225 ft. NE of No. 1 and 310 ft. southerly from Powers & Hamill's No. 2 ..Coring sandy shale showing oil 3,272 ft.
Harvey Smith et al's No. 1 W. H. Gray (W.O.), Wm. Hadden Sur., 400 ft. from S line, 150 ft. from E line of Blk. 2 ..Pulled screen 3,259 ft.
Smith et al's No. 3 Hudson, Henry Parker Sur., 800 ft. N of No. 2 and 175 ft. W of E line of lease.....Location.
The Texas Company's No. 1 Texas Pipe Line Co., Wm. Hadden Sur., Blk. 5, 50 ft. S and 50 ft. W of NE cor. of tract ..Drlg. gumbo 1,687 ft.

PORT NECHES—ORANGE COUNTY

The Texas Co.'s No. 3 Stark, 350 ft. E. 100 ft. N of SW cor. of Marshall Beauchamp Sur. ..Spudded.
The Texas Co.'s No. 2 Kuhn (D.D.), 559 ft. W and 150 ft. S of NE cor. Mary E. Hall Sur. No. 2 ..Pulling liner 4,315 ft.

ORANGE—ORANGE COUNTY

Sun Oil Co.'s No. 1 Beilis (D.D.) ..No report.

REFUGIO—REFUGIO COUNTY

E. M. Jones' No. 1-B Mitchell (D.D.), 350 ft. NW of SE line and 350 ft. SW of Mission River ..No report.
Larco Gas Co.'s No. 5 Branch, Refugio Town tract, Lot 6, Blk. 3, 100 ft. W of No. 3 ..Drlg. 4,600 ft.
United Prod. Corp.'s No. 3 W. J. Fox (D.D.), Wm. Hews & L. Brown Sur., 2,000 ft. NE along SE line from SE cor. of lease, thence 1,600 ft. NW at right angles ..T.D. 6,620 ft; plugged to 6,480 ft.
United Prod. Corp.'s No. 4 W. J. Fox, 2,600 ft. NE along SE line from SE cor. of Wm. Hews and L. Brown Sur, thence 1,420 ft. NW at right angles ...Drlg. hard shale and lime 6,435 ft.

United Prod. Corp.'s No. 5 W. J. Fox, 2,150 ft. NE along SE line from SE cor. of Wm. Hews and L. Brown Sur., and thence 890 ft. NW at right angles ..... Hard blue shale 5,886 ft; cmtd. 7-in. csg. 5,848 ft.

Pearson Properties' No. 3 Ryals (W.O.), 600 ft. from S line and 150 ft. from W line of lease ..... T.D. 6,614 ft.; sidetracked at 5,194 ft; drlg. 6,500 ft.

CLAY CREEK—WASHINGTON COUNTY

John Walker et al's No. 1 Henry Wendt, J. F. Perry Sur., 150 ft. from SW line and 405 ft. from SE line of tract ..... No report.

SOUTH LOUISIANA FIELDS
IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Shell Petroleum Corp.'s No. 1 Fontenot, Sec. 7-9s-4w, 450 ft. due E No. 2 Heyd ..... Sand 6,895-6,912 ft; set screen; washing.

EDGERLY—CALCASIEU PARISH

C. M. Crotty Oil Co.'s No. 7 Lillard (W.O.) ..... T.D. 2,530 ft.; S.D.

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 3 Martha Moss, 300 ft. W, 150 ft. S, NE cor. NW SE, Sec. 5-10s-9w ..... Drlg. sand 3,505 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 751 fee (D.D.), Sec. 29-9s-10w .. Pulling screen to deepen 4,246 ft.
Union Sulphur Co.'s No. 769 fee, 295 ft. S, 918 ft. W of C of Sec. 29-9s-10w ..... Drlg. shale 5,700 ft.
Union Sulphur Co.'s No. 770 fee, 292 ft. S, 1,343 ft. W of center, Sec. 29-9s-10w ..... Location.
Union Sulphur Co.'s No. 771 fee, 421 ft. S, 340 ft. W of center, Sec. 29-9s-10w ..... Drlg. hard lime 4,205 ft.
Union Sulphur Co.'s No. 772 fee, 146 ft. S, 882 ft. W of center, Sec. 29-9s-10w ..... Location.

VINTON—CALCASIEU PARISH

Vinton Pet. Co.'s No. 5 Matilda Gray (D.D.), 456 ft. W, 362 ft. N, SE cor. SW NE, Sec. 33-10s-12w ..... Cmtd. bottom of hole to sidetrack 3,470 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 8 Dorion, 1,280 ft. S and 792 ft. E of NW cor. Sec. 24-12s-10w ..... T.D. 2,872 ft.; plugged back to 2,862 ft.
Calcasieu Oil Co.'s No. 17 Watkins (D.D.), 2,088 ft. E, 162 ft. S, NW cor., Sec. 24-12s-10w ..... Rig up to deepen; 2,712 ft; standing.
Calcasieu Oil Co.'s No. 34 Watkins, 435 ft. E, 430 ft. S, NW cor., Sec. 24-12s-10w ..... Rig.
Calcasieu Oil Co.'s No. 2 Unsurveyed Island, 3,825 ft. N, 1,080 ft. E, SW cor., Sec. 39-12s-10w ..... Set 1 joint 4½-in. screen 2,822 ft; comp. flowing 1,669 bbls. net oil, 14% b.s. and wtr.; ¾-in. choke.
R. E. Sless' No. 2 Vincent (D.D.), 2,395 ft. S, 1,355 ft. W, NE cor., Sec. 36-12s-10w ..... No report.
Sultex Oil Co.'s No. 1 Dorion, 181 ft. W, 12 ft. N of junction of W line of Sec. 46-12s-10w and S bank of Kelso Bayou in Sec. 36 ..... No report.
J. G. Sutton's No. 7 Irvin, 2,120 ft. N and 1,845 ft. W of SE cor., Sec. 13-12s-10w ..... Drlg. 1,875 ft.
The Texas Co.'s No. 9 State, 2,229 ft. N, 918 ft. E from SE cor. Sec. 13-12s-10w, in 12s-9w ..... Location.
The Texas Co.'s No. 10 State, 2,375 ft. N, 564 ft. E, SE cor. Sec. 13-12s-10w, in Twp. 12s-9w ..... Location.
Union Sulphur Co.'s No. 1 Gulf land (Pure Oil Co. lease), 1,420 ft. N, 400 ft. W of SE cor. Sec. 11-12s-10w ..... Drlg. rock 7,600 ft.
Yount Lee Oil Co.'s No. 51 State, 545 ft. S, 560 ft. E of NW cor. of Sec. 24-12s-10w ..... Lime rock 2,850 ft.

STARKS—CALCASIEU PARISH

Gulf Refining Co.'s No. 30 Lutcher-Moore, Sec. 19-9s-12w, 300 ft. S of No. 16 and 300 ft. W of No. 20 .... Rigging up to pump 875 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 11 Yount Lee, Sec. 12-13s-8w, 800 ft. S 66 deg. 42 min. from No. 9 ..... Location.

MISCELLANEOUS WILDCATS
TEXAS
AUSTIN COUNTY

Grant & Baker's No. 1 Chesley, W. C. White Sur., 150 ft. from NW line and 150 ft. from SW line of 26-acre tract (northeast of Raccoon Bend Field) ..... Cmtd. 10-in. csg. 196 ft.; temp. abd.
O'Hara Oil & Gas Co.'s No. 1 Neilius, J. C. Cummings Hacienda Sur., 650 ft. N of No. 1 Schroeder in 18-acre tract, north edge Mill Creek ..... Derrick.
Taylor & Mitchell's No. 1 Schlecte, 1,850 ft. from SE line and 3,100 ft. from NE line of John Fitzgibbons Sur. ..... Drlg. sand and shale 3,750 ft.

BRAZORIA COUNTY

John Deering's No. 1 C. W. Chapman, 294 ft. from S line and 104 ft. from E line of Lot 2, Andrew Robinson Sur. ..... Fishing drill stem 1,593 ft.
J. R. Ingram's No. 2 Levitt, John Peake Sur., 75 ft. NW of No. 1 ..... S.D. 1,735 ft.
The Texas Co.'s No. 2 Belcher, 1,725 ft. southeasterly and 1,231 ft. southwesterly at right angles out of N cor. tract, Harvey N. Little Sur. ..... Drlg. hard sand 6,052 ft.
The Texas Company's No. 3 Belcher, Manvel, Harvey N. Little Sur., 1,250 ft. southwesterly and 200 ft. southeasterly out of N cor. of Belcher lease ..... Derrick.

BURLESON COUNTY

Ball & Knob's No. 1 Polansky, M. B. Lawrence Sur., 359 ft. from E line and 469 ft. from N line of 158-ac. tr. ..... Rig.
E. M. Bracey et al's No. 1 Bracey, J. Lastly Sur., 880 ft. from E cor. of P. Taylor 110 acres, SE along NE line of J. G. Houston 160 acres, thence 180 ft. at right angles in 3-acre tract ..... Location.
Marek & Son's No. 3 A. Marek, N. McFaddin Sur., 1,068 ft. N and 225 ft. W of SE cor. of tract ..... Standing 2,210 ft.
M. O. & T. Corp.'s No. 1 Rigers ..... Shale 2,500 ft.
Sampson Oil & Gas Co.'s No. 1 Duckworth & Gilley, 100 ft. from S line and 100 ft. from W line of Blk. 8, P. Singleton Sur. ..... Drlg. shale 1,320 ft.
J. E. Stubblefield et al's No. 1 Mitchell, A. T. Woolridge Sur., 81 ft. SW and 4,340 ft. SE of S cor. of Joseph Henson Sur. ..... Gumbo 600 ft.; standing.

COLORADO COUNTY

Coyle-Concord Oil Co.'s No. 1 Nelson, I.&G.N. Sur., Sec. 43 ..... Cmtd. 10-in. csg. 680 ft; standing.

FORT BEND COUNTY

O'Hara et al's No. 1 Brown, Pilant Lake, Wm. Barrett and Abner Harris Sur., 600 ft. out of SW cor. of Brown 600-acre tract ..... Setting up larger rig 4,290 ft.
Naylor & DeCosta's No. 1 Naylor, 6,350 ft. N, 55 deg. E from SW cor. 653-acre tract in Christman Sur. ..... Cmtd. 12½-in. csg. 1,221 ft.; S.D.
Stone & Wyman's No. 1 Beard, H.&T.C. Sur. No. 118, 1,150 ft. from NW line, 1,892 ft. from NE line ..... Drlg. 1,450 ft.

HARDIN COUNTY

Joe E. Proctor's No. 1 Russell & Teagle, 3,650 ft. E and 2,777 ft. N of NW cor. of Wm. W. Young Sur. ..... No report.
Votaw Oil Co.'s No. 1 Southwestern Lbr. Co., 150 varas W of C of E line of Mary E. Sherman Sur. ..... Rigging up.

HARRIS COUNTY

T. V. Buckholve & Sons' No. 1 Miller, Arthur McCormick Sur. ..... D.S. stuck 547 ft.; setting up new rig.
Flanigan et al's No. 1 Woodburn, Genoa, August Whitlock Sur., 200 ft. out of NW cor. of tract ..... Derrick.
Flannigan et al's No. 2 Woodburn, 1,400 ft. S and 400 ft. E of NW cor., Aug. Whitlock Sur. ..... Cmtd. 10-in. csg. 235 ft; T.D. 239 ft; standing.

JACKSON COUNTY

Chicago Gulf Corp.'s No. 4 Druschell (W.O.) ..... Standing 5,149 ft.
Chicago Gulf Corp.'s No. 10 Druschell, Hayes Sur., 1,300 ft. NW of No. 3 ..... No report.

JASPER COUNTY

Hext Drlg. Co.'s No. 1 Flourney, B. F. Jones Sur., 900 ft. NW of Helmerich & Payne's No. 1 Flourney ..... T.D. 4,005 ft.; washing to bottom.
Rio Neches Oil Co.'s No. 2-A Boykin, B.B.B.&C. Sur., 330 ft. SE of No. 1-A ..... No report.

JEFFERSON COUNTY

Elam & Pipkin's No. 2 Broussard, John McGaffey Sur., 150 ft. due E of No. 1 ..... Rig.
Jack Shults' No. 1 M. O. Todd, 200 varas S and 5½ varas E of NW cor. of Wm. Carr Sur. ..... Drlg. sandy shale 5,967 ft.

LIBERTY COUNTY

Bain-Rheubotham's No. 1 J. M. Neal, Edward Tanner Sur., 1,800 ft. E, 1,300 ft. N of most westerly NW cor. of Margaret Evans Sur. ..... Moving in rig.
Devore Oil Co.'s No. 1 Finley, 10,500 ft. from E line and 2,000 ft. from S line of A. B. Hardin Sur. ..... Drlg. gumbo 3,330 ft.

MATAGORDA COUNTY

Dr. Griffith et al's No. 3 Baer, Big Hill, 5,000 ft. N, 3,000 ft. E from SW cor. of Seth Ingram Sur. ..... No report.
Shepherd's Mott Salt Dome Oil Co.'s No. 1 Hawkins, Shepherd's Mott, 5,268 ft. from N line and 1,320 ft. from E line of B. McCarthy Sur. ..... Location.
United North & South Oil Co.'s No. 1 Stoddard, J. C. Keller Sur., 150 ft. W and 545 ft. N of SE cor. Blk. 53, Buckeye Townsite ..... Reset screen 7,831 ft; fishing taller.

MONTGOMERY COUNTY

Alpha Oil Co.'s No. 1 Conroe, A. McCowan Sur. ..... Tentative location.
Gohlson Bros. and Rycade Oil Corp.'s No. 1 Drought. 3,340 ft. along N line of Kronkrite Sur., from NE cor., thence 250 ft. S at right angles ..... Drlg. shale 1,195 ft.
Falvey & McComb's No. 1 Kidd, Chas. B. Stewart Sur., NE cor. 100-ac. tr. ..... Location.
Heep Oil Corp.'s No. 1 Roberts, Wm. H. Harrison Sur., 450 ft. out of SE cor. of tract ..... Drlg. gumbo 3,245 ft.
Heep Oil Corp.'s No. 1 J. R. Freeman, John Davis Sur., 450 ft. from S line in center of 36.46-ac. tract ..... Coring sand and shale 5,112 ft.
Kraft & Gesicke's No. 1 South Tex. Dev. Co., T.&N.O. Sur., Blk. 9 ..... Derrick.
Pevehouse Oil Co.'s No. 1 Sealey, Jas. Pevehouse Sur., 1,575 ft. N of N line of Horton & Woodson's 1.562-acre tract and 2,226 ft. E of W line of H.&W. 1,870-acre tract ..... Shut down 3,984 ft.
Rowe & Flowers' No. 1 Varner, R. House Sur., 330 ft. out of NE cor. of 33-ac. tr. ..... Rigging up.
Smith & McDaniel's No. 1 Sealey, J. C. Pitts Sur., 3,482 ft. SW along SE line of survey from most southerly corner of J. E. Anderson 61.66-ac. tract, thence 4,289 ft. NW at right angles ..... Drlg. gumbo 1,850 ft.
Strake Oil Corp.'s No. 2 South Texas Development Co., Theo. Slade Sur., 2,220 ft. S 10 deg. E of No. 1 ..... Setting screen to test sand; T.D. 5,026 ft.

ORANGE COUNTY

Altex Oil Co.'s (Veteran Oil Co.) No. 1 Reed, A. Nelson Sur. No. 1, 500 ft. from N line and 250 ft. from E line of tract ..... T.D. 4,655 ft.; cmtd. 6¼-in. csg. 4,650 ft.
Crew Oil Co.'s No. 1-A Mansfield, 50 ft. E of No. 1 ..... Shut down 2,275 ft.

POLK COUNTY

Freeman et al's No. 2 Freeman ..... Shut down 3,162 ft.
T. B. Hoffer's No. 1 Saner-Ragly Lbr. Co., 200 ft. out of most northerly cor. of most easterly County School Land Abst. 271 ..... Shut down 1,517 ft.

REFUGIO COUNTY

Humble Oil & Ref. Co.'s No. 1 O'Connor (D.D.), 6,012 ft. S from NE cor. along SE line of Lon T. Rios Sur., thence 7,375 ft. W at right angles in John Keating Sur. ..... Drlg. shale 4,493 ft.
Humble Oil & Ref. Co.'s No. 2 O'Connor, John Keating Sur., 12,625 ft. N of S line at right angles and 8,158 ft. W of E line at right angles ..... Shale 4,579 ft; reaming.

SAN JACINTO COUNTY

Seven Wells Oil Co.'s No. 1 Foster Lumber Co., 3,000 varas from the E line and 2,000 varas from the S line of H. Alabury Sur. ..... T.D. 2,950 ft; no report.

TRINITY COUNTY

John Deering's No. 1 J. B. Gibson ..... Abd. in shale 2,305 ft.
Joseph M. Weaver's No. 1 Thompson, 150 ft. out of NE cor. of I.&G.N. Sur., No. 47 ..... Drlg. 3,575 ft.

VICTORIA COUNTY

Bunte et al's No. 2 Keeran, Martin DeLeon Sur., 200 ft. E of No. 1 ..... Drlg. sandy shale showing gas 5,220 ft.
Cullen & West's No. 1 Keeran ranch, Martin DeLeon Sur., 450 ft. from S line, 450 ft. from W line of tr. .. Cmtd. 12½-in. csg. 921 ft.
Houston Oil Co.'s No. 1-A McFaddin, 200 ft. from NE line, 240 ft. from SE line of I.R.R. Sur. No. 20 ..... Drlg. sandy shale and lime 4,278 ft.
T. B. Slick Estate's No. 2 McFaddin, J. Varian Sur., 3,500 ft. NW of No. 1 and 1,100 ft. NE at right angles to SW line of lease ..... Sand showing oil 4,485-94 ft.; cmtd. 9-in. csg.
The Texas Company's No. 4 McFaddin, 36 deg. E. 1,728½ ft. from NE cor. of Andrew J. Gray Sur. in John M. Rine Sur. ..... T.D. 2,840 ft; sidetracked 1,030-1,112 ft; losing returns.

WALKER COUNTY

Hart Oil Co.'s No. 1 Thompson Lbr. Co., Jose Ortega Sur., 1,265 ft. S, 1,876 ft. W of SW cor. of J. B. Gibson's 71-acre tract ..... Shut down for repairs 2,000 ft.
Geo. F. Kerr's No. 1 Smithers Bros., S. Manning Sur. .... No report.

WALLER COUNTY

McDaniel and associates' No. 1 Citizens State Bank, B.B.B.&C. Sur., C of 150-acre tract ..... No report.

SOUTH LOUISIANA
ASCENSION PARISH

McElroy Pet. Co.'s No. 2 Lacey, 150 ft. S, 150 ft. W of NE cor. of Sec. 29-10s-4e ..... Fishing D.S. 4,560 ft.

CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w ..... Shut down 875 ft.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w ..... Shut down 3,650 ft.

CAMERON PARISH

Brownie-Babbette Oil Co.'s No. 1 R. A. Moore, 562 ft. W, 50 ft. S of NE cor. E half SE of Sec. 13-12s-12w .. Drlg. wtr. sand 5,505 ft.

EVANGELINE PARISH

Emile LeDeau's No. 1 Vidrine, 260 ft. W and 350 ft. S of NE cor. of Sec. 47-3s-2e ..... Shut down 1,420 ft.

IBERIA PARISH

Warrick Oil Co.'s No. 1 Bernard, 912 ft. N and 150 ft. E of SW cor. Sec. 54-12s-7e ..... Sand and shale showing 2,874-80 ft; cmtd. 6⅝-in. csg.

IBERVILLE PARISH

Standard Oil Co.'s No. 2 Myrtle Grove-Wilbert, Bayou Choctaw, 2,040 ft. N and 600 ft. W of C of Sec. 52-9s-11e ..... No report.
Standard Oil Co.'s No. 3 Gay, Bayou Choctaw, 4,500 ft. N and 600 ft. E of SW cor. SE of Sec. 52-9s-11e .... No report.

PLAQUEMINES PARISH

Lake Washington-Freeport Sulphur Co.'s No. 1 Cockrell-Moran, Sec. 14-20s-26e, 3,442 ft. E and 46 ft. N of station ..... Cavity 1,443 ft.

POINTE COUPEE PARISH

Grand Bay Oil & Gas Co.'s No. 1 Moniotte, 10,140 ft. S and 13,450 ft. E of NW cor. Twp. 5s-11 in Sec. 34 .... Shut down 310 ft.

TERREBONNE PARISH

La. Gas & Fuel Co.'s No. 2 Minor, 2,430 ft. S and 1,980 ft. E of NW cor., Sec. 2-18s-16e ..... T.D. 6,002 ft; standing.
The Texas Company's No. 7 State-Lake Pelto, 2,316 ft. N, 104 ft. W of SE cor., Sec. 5-23s-15e ..... Location.
Freeport Sulphur Co.'s No. 2 Wurlow, Bay St. Elaine, 980 ft. S and 980 ft. W of NE cor. of Sec. 17-22s-18e. Sulphur test.
The Texas Company's No. 4 State-Lake Barre (D.D.), 1,900 ft. S and 600 ft. E of NW cor., Sec. 20-21s-20e.. T.D. 2,660 ft.; pulling screen to deepen.
The Texas Company's No. 5 State, Dog Lake, 2,270 ft. S and 450 ft. E of NW cor. of Sec. 5-22s-16e ..... Drlg. shale 4,005 ft.
The Texas Company's No. 11 State-Lake Barre (D.D.), Sec. 36-21s-19e ..... Reset screen 3,806 ft; comp. flowing 1,200 bbls. daily, 570 lbs., ⅝-in. choke.
The Texas Company's No. 10 State, Lake Barre ..... Location.
The Texas Co.'s No. 14 State Lake Barre, 400 ft. S, 850 ft. W, NW cor. Sec. 36-21s-20e, in Sec. 37-21s-19e ..... Drlg. gumbo 2,225 ft.

VERMILLION PARISH

Pure Oil Co.'s No. 2 Alliance Trust Co., 1,375 ft. E, 950 ft. S, NW cor., Sec. 34-11s-1w ..... Sand showing oil 3,995-4,029 ft; cmtd. 7-in. csg. 3,995 ft.
Pure Oil Co.'s No. 1 Mulvey Irrigation (Gueydan), 253 ft. S, 390 ft. E of No. 2 Alliance, in Sec. 34-11s-1w... Location.

WEST FELICIANA PARISH

Putnam Synd.'s No. 3 Como Plantation, Sec. 51-1s-14w... Shut down 2,449 ft.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 60)

OSAGE COUNTY

Briggs & Smith's No. 1 Wood, SE NW, Sec. 21-14-15..... S.O. 2,190-2,200 ft.; S.D.

PHILLIPS COUNTY

Hall et al's No. 1 Donaldson, C NE NE, Sec. 25-5-18w... Drlg. 2,670 ft.

PRATT COUNTY

Ninnescah C. & O. Co.'s No. 1 Hardesty, SW SE SE, Sec. 28-27-11w ..... Rig.

RAWLINS COUNTY

J. G. Durham et al's No. 1 Weaver, SE cor., Sec. 2-2-35w.. S.D. 3,925 ft.

RENO COUNTY

Martin et al's No. 1 Yadu, C NW NW, Sec. 15-24-5w.... S.D. 318 ft.
Jarvis & Wright's No. 1 Rainbow, NW SE, Sec. 33-22-7w .. S.D. 3,966 ft.

RICE COUNTY

Langston et al's No. 1 Wells, NE SE Sec. 4-20-9w ..... Location.
R. Ramsey's No. 1 Hutton, SW NE SW Sec. 6-20-9w.... Location.
Slick et al's No. 1 Arth, SE NE Sec. 27-18-10w..... Spudding.
J. Liggett et al's No. 1 Thodel, C NW NW, Sec. 11-21-7w. S.D. 50 ft.

RUSSELL COUNTY

J. Brennan's No. 1 Waly, CNL E½ NW, Sec. 29-13-11w.. Rig.

RUSH COUNTY

Skelton et al's No. 1 Brock-Hartman, SW SE NE, Sec. 4-18-16w ..... S.D. 50 ft.

SALINE COUNTY

Twin Mounds Oil Co.'s No. 1 Weis, C W½ NE NW, Sec. 26-13-4w ..... T.D. 3,700 ft.; U.R. 6-in. csg. from 3,021 ft.

SEDGWICK COUNTY

Milly et al's No. 1 Jones, SW cor. Sec. 26-27-1 ..... S.D. 450 ft.
Scroggins et al's No. 1 Bartlett, NW SE NW Sec. 35-27-1 ..... Rig.
Tulsa Oil Co.'s No. 1 Levert, C SE SW, Sec. 8-28-2w..... Drlg. 2,395 ft.

SHERIDAN COUNTY

Flo et al's No. 1 Shoemaker, SE SW, Sec. 27-7-26w..... Fishing 4,505 ft.

STEVENS COUNTY

Argus Prod.'s No. 2 Christopher, C NE, Sec. 10-33-39w... S.D. 5,521 ft.

SUMNER COUNTY

Trees Oil Co.'s No. 1 Tompkins, SW, Sec. 26-33-1..... Location.
Trees Oil Co. and Shell's No. 1 Springate, NE SE SW, Sec. 6-34-3 ..... Drlg. 3,538 ft.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 61)

Texana Oil Co.'s No. 1 Clark-Morris Lbr. Co., 375 ft. N, 560 ft. E, C, Sec. 23-5-6 ..... Washing to bottom 2,504 ft.

OUACHITA PARISH

Wilson & Mitchell's No. 1 Williams, Sec. 5-16-1e, 330 ft. E, 240 ft. S, NW cor. SW SE..... Reaming 3,200 ft.

RED RIVER PARISH

C. F. Davis' No. 1 Pierson, 500 ft. S, 317 ft. E, NW cor. SW NW, Sec. 13-14-11..... Location.
Lawrence Decker, tr.'s No. 1 Madden, 1,650 ft. S and W, NE cor., Sec. 31-14-10 ..... Derrick.
La. Oil Dev. Co.'s No. 3 La. Delta Pecan Co., 2,950 ft. S, 300 ft. E, NW cor., Sec. 27-13-11..... Spudded and S.D. 50 ft.

RICHLAND PARISH

National Gas Co.'s No. 1 Singletary, 1,980 ft. N, 660 ft. W, SE cor., Sec. 26-18n-7e..... S.D. 2,515 ft.

SABINE PARISH

Adams & Roberson's No. 1 Peterson, 406 ft. N, 300 ft. W, SE cor. NE NE, Sec. 35-8-13 ..... Derrick.
J. R. Askew's No. 1 Sabine Lbr. Co., NE NE, Sec. 9-7-13. Set 10-in. 100 ft; drlg. 1,900 ft.
R. W. Boulding's No. 1 Williams, Sec. 17-7-10, 200 ft. S and E, NW cor. SW NE..... Drlg. 1,100 ft.
J. M. Bridges' No. 1 Armstrong, 360 ft. N, 330 ft. E, SW cor. SE, Sec. 28-10-11..... Coring 3,358 ft.
Broderick & Calvert's No. 1 Costello, Sec. 2-7-14, 375 ft. S, 150 ft. W, NE cor. SE NW..... S.D. 150 ft.
R. E. Brooke's No. 1 A. Gray, 330 ft. N and W, SE cor. SW NE, Sec. 35-8-13 ..... Location.
Bob Chew's No. 1 O. Gray, 330 ft. N and E, SW cor. SW NW, Sec. 35-8-13 ..... Location.
Cliff Oil Co.'s No. 1-A Martinez School, 720 ft. N, 105 ft. W, SE cor. NE SE, Sec. 4-7-13 ..... Location.
W. M. Coates' No. 1 Stille, 330 ft. N, 660 ft. W, SE cor., Sec. 35-8-13 ..... Set 10-in. 102 ft; set 6-in. 2,026 ft.
W. M. Coates' No. 1 Gray, 330 ft. N and W, SE cor. SW, Sec. 2-7-13 ..... Location.
W. M. Coates' No. 2 Gray, 330 ft. S and W, NE cor. SE SW, Sec. 2-7-13 ..... Location.
Coates Pet. Co.'s No. 2 Stille, 330 ft. N and E, SW cor. SE SW, Sec. 35-8-13 ..... Rigging up.
Coates Pet. Co.'s No. 3 Stille, 330 ft. N and E, SW cor., Sec. 35-8-13 ..... Location.
The Coring Oil Co.'s No. Cobb, 330 ft. N and E, SW cor. Sec. 14-7-11 ..... Derrick pattern.
Covington, Clark & Pullilove's No. 1 Bill Bray, 200 ft. N and W, SE cor. SE NW, Sec. 33-7-11 ..... Derrick pattern.
Craig et al's No. 1 Travis, Sec. 13-7-11, 300 ft. S and E, NW cor. SE NW ..... Waiting on csg. 2,450 ft.
Crescent Drlg. Co.'s No. 1 Williams, 370 ft. E, 330 ft. S, NW cor. N½ SW, Sec. 21-7-13 ..... Location.
Crescent Drlg. Co.'s No. 2 Williams, 330 ft. S and W, NE cor. SE NW, Sec. 21-7-13 ..... Location.
Mark Curtis et al's No. 1 Sabine Lbr. Co., 330 ft. N and W, SE cor. NE SE, Sec. 35-8-13 ..... Derrick pattern.
R. E. Davidson's No. 1 Davis, 600 ft. S, 135 ft. E, NW cor., Sec. 28-7-11 ..... Derrick.
B. A. Ferrell's No. 1 Haley, Sec. 6-7-12, 300 ft. S and E, NW cor. NW SW..... S.D. 2,046 ft; W.O. csg.
Harry Flinchbaugh's No. 1 Sepulbedo, 250 ft. N and E, SW cor. SE NE, Sec. 4-7-13 ..... Location.
R. L. Gay, tr.'s No. 1-A Long Bell Lbr. Co., 430 ft. S, 300 ft. W, NE cor. NW NW, Sec. 10-8-13..... Coring 5,490 ft.
R. L. Gay, tr.'s No. 11 Bowman-Hicks, 330 ft. N and W, SE cor. NE NE, Sec. 14-7-14 ..... Rigging up.
J. I. Hall's No. 1 Williams, SE NW, Sec. 3-7-10..... Testing 2,821 ft.
Vick Hammond's No. 1 Esernack, SE cor. NW SW, Sec. 2-7-13 ..... Location.
W. N. Hankins' No. 1 Tilley, 200 ft. E, 30 ft. S, NW cor. SE SE, Sec. 30-8-12 ..... Derrick.
D. Holcomb's No. 1 Petty, 330 ft. S and W, NE cor. SW SW, Sec. 13-7-11 ..... Testing 2,547 ft.
Howard et al's No. 1 Williams, 300 ft. N and E, SW cor. SE NW, Sec. 13-7-11 ..... Location.
Ab Jones' No. 1 Garcia, 200 ft. S and W, NE cor. NW SE, Sec. 4-7-13 ..... Location.
G. E. Jordan's No. 1 Dew, 330 ft. N, 340 ft. E, SW cor. SW SE, Sec. 34-8-11 ..... Location.
J. J. Keen, tr.'s No. 1 Belton (no check), Sec. 31-9-13... S.D.; W.O. 3,128 ft.
A. D. King, tr.'s No. 1 Davis, 170 ft. N, 410 ft. E, SW cor. NW NE, Sec. 29-7-11 ..... Location.
A. D. King, tr.'s No. 1 Germain, Sec. 7-7-10, 330 ft. E, 515 ft. N, SW cor. NE NE..... S.D. for wtr. 1,630 ft.
A. D. King, tr.'s No. 1 T. L. Andries, 200 ft. S, 300 ft. E, NW cor. SE SE, Sec. 15-7-11 ..... Location.
A. D. King, tr.'s No. 1 J. J. Andries, 140 ft. S, 240 ft. W, NE cor. SE SW, Sec. 15-7-11 ..... Drlg. 1,720 ft.
M. J. Klasick's No. 1 Buvins, 570 ft. S, 14 ft. W, NE cor., Sec. 29-7-11 ..... Set 6-in. 2,362 ft.
W. F. Lacey's No. 3 McNeely, Sec. 14-7-11, 300 ft. S and E, NW cor. NE NE ..... Set 10-in. 101 ft; drlg. 840 ft.
S. A. Lane et al's No. 1 DeKeyser, 223 ft. E, 330 ft. S, NW cor. NE, Sec. 23-7-11 ..... Derrick.
Jack Lanier's No. 1 Petty, Sec. 11-7-11, 330 ft. N and W, SE cor. NE SE ..... Comp. pumping 50 bbls. 2,575 ft.
Geo. LeGrand's No. 1 McGough, Sec. 3-8-10..... S.D. 870 ft.
Lowery & Greene's No. 1 Martinez, 330 ft. N and W, SE cor., Sec. 34-8-13 ..... Set 10-in. 102 ft; drlg. 1,825 ft.
Mays et al's No. 1 Delong, Sec. 5-7-10, 375 ft. N, 175 ft. W, SE cor. SE SW..... Derrick pattern.
Hill Myers' No. 1 Garcia, 200 ft. N and W, SE cor. SW NW, Sec. 4-7-13 ..... Rigging up.
E. F. Neely's No. 1 Cobb & Alford, Sec. 14-7-11, 200 ft. S, 100 ft. E, NW cor. NE SW..... W.O.S.R. 2,565 ft.
E. F. Neely's No. 1 Rains, 660 ft. N, 100 ft. W, SE cor., SW NW, Sec. 14-7-11..... Testing 2,541 ft.
C. D. Neff, tr.'s No. 1 Snell, Sec. 9-7-11, 350 ft. N, 660 ft. W, SE cor. Sec. ..... W.O.S.R. 2,509 ft.
C. D. Neff, tr.'s No. 1 Peterson, 200 ft. N and E, SW cor. NW NW, Sec. 35-8-13 ..... Rigging up.
Palmer & Smitherman's No. 1 La. Long Leaf Lbr. Co., Sec. 12-7-11, 330 ft. S and E, NW cor. NE SE..... Location.
Palmer & Smitherman's No. 2 La. Long Leaf Lbr. Co., 330 ft. S and W, NE cor. SE, Sec. 12-7-11..... Location.
Palmer & Smitherman's No. 3 La. Long Leaf Lbr. Co., 330 ft. S and W, NE cor. NE SW, Sec. 12-7-11..... S.D. 2,630 ft.
Pelican Nat. Gas Co.'s No. 8 Sabine Lbr. Co., 330 ft. S and W, NE cor. NE SW, Sec. 3-7-13 ..... Drlg. 2,350 ft.
H. W. Perritt's No. 1 Brown Lbr. Co., Sec. 6-7-10, 330 ft. N and E, SW cor. SW SE ..... Tested dry 2,762 ft; W.O.
Roy Raines et al's No. 1 Beard, 720 ft. E, 700 ft. N, SW cor. SW SE, Sec. 8-8-10..... Derrick.
F. G. Reed et al's No. 1-A McNeely, 200 ft. N and E, SW cor. NW NE, Sec. 14-7-11..... W.O.S.R. 2,502 ft.
Sabine Prod. Co.'s No. 1 Sabine Lbr. Co., 330 ft. S and W, NE cor. NW SE, Sec. 3-7-13 ..... S.D. repairing rig 2,084 ft.
Skully & Beach's No. 2 Lafitte, 149 ft. S, 228 ft. E, NW cor., Sec. 13-7-11 ..... Location.
H. R. Smith et al's No. 1 La. Long Leaf Lbr. Co., Sec. 12-7-11, 330 ft. S and W, NE cor. NW SW.. ..... Location.
Sneed & Sneed's No. 1 Pearce, 200 ft. N, 215 ft. E, SW cor. NE SW, Sec. 35-8-13 ..... Location.
Southland Drlg. Co.'s No. 1 F. Martinez, 330 ft. N and W, SE cor. W½ SE, Sec. 34-8-13 ..... Derrick.
Southland Drlg. Co.'s No. 2 F. Martinez, Sec. 11-7-13, 330 ft. S and E, NW cor. NE NW..... Derrick pattern abd.
Southland Drlg. Co.'s No. 1 Gilbert Martinez, Sec. 2-7-13, 330 ft. N and W, Sec. cor. SW SW..... Derrick pattern abd.
Southland Drlg. Co.'s No. 1 Frost Lbr. Co., 330 ft. N and W, SE cor. NE NE, Sec. 13-9-11..... Set 12½-in. 103 ft.
State Prod. Co., Inc.'s No. 1 Davis, Sec. 17-7-10, 150 ft. N and E, SW cor. SW NW..... Drlg. 2,105 ft.
State Prod. Co., Inc.'s No. 1-B Davis, 200 ft. N and E, SW cor., Sec. 17-7-10 ..... Derrick pattern.
Supreme Oil Co.'s No. 1 Pruitt, 330 ft. N and E, SW cor. SE SW, Sec. 30-8-11 ..... Location.
A. F. Tarver's No. 3 Cutrer, Sec. 12-7-11, 1,120 ft. E, 300 ft. N, SW cor. NW..... W.O.S.R. 2,600 ft.
C. H. Tuttle's No. 2 Byrd, 138 ft. S, 134 ft. E, NW cor., Sec. 7-7-10 ..... Rigging up.
C. C. Walker's No. 1 Noble-Neely, 330 ft. S and E, NW cor. SW, Sec. 36-8-13 ..... Location.
Williams & Spiers' No. 1 Williams, Sec. 31-8-10, SE cor. SE SW..... Set 10-in. 100 ft.

TENSAS PARISH

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12..... S.D. 3,545 ft.

VERNON COUNTY

Llano Co-operative Colony's No. 1 fee, NW NE, Sec. 34-2n-9w ..... Location.

WEBSTER PARISH

J. K. Wadley's No. 1 Matthews, Sec. 11-23-9, 130 ft. N, 330 ft. E, SW cor. SW NE..... S.W. and abd. 2,825 ft.

ARKANSAS

ASHLEY COUNTY

D. S. Brooks, Inc.'s No. 1 Crossett Lbr. Co., 330 ft. N and E, SW cor. SW SE, Sec. 31-15s-6w..... S.D. for wtr. 3,170 ft.

COLUMBIA COUNTY

Kendall Oil Co.'s No. 1 Fullenweider, Rhea & Kitchen, Sec. 13-17-22 ..... S.D. 814 ft.

CLAY COUNTY

S. C. Jeffus' No. 1 Underwood, 510 ft. N, 350 ft. W, C, NW SE, Sec. 4-20-3 ..... S.D. 1,350 ft.

CLEVELAND COUNTY

Crum & Stillwell's No. 1 E. R. Bell, Sec. 10-10s-12..... Rigged up and S.D.

CLEBURNE COUNTY

(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... S.D. 3,740 ft.

CRAWFORD COUNTY

Ozark Nat. Gas Co.'s No. 1 C. E. Jones, 660 ft. N, 372 ft. E, SW cor. SE SW, Sec. 32-9-31..... Drlg. 2,550 ft.

DALLAS COUNTY

J. H. James, tr.'s No. 1 Fordyce Lbr. Co., 200 ft. S, 200 ft. E, NW cor. SE, Sec. 11-9-15..... S.D. 2,575 ft.
Zepp O. & G. Co.'s No. 3 Hillman, Sec. 20-10-12, 180 ft. N, 450 ft. E, SW cor. NW NE..... Location.

DREW COUNTY

Co-Operative Dev. Co.'s No. 1 Ogles, Sec. 35-15-5, 330 ft. S and E, NW cor. NE NW..... S.D. 1,890 ft.

HOT SPRINGS COUNTY

Star Oil Co.'s No. 1 Cunningham, 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16..... S.D. 1,306 ft.

LINCOLN COUNTY

Lawrence Cook, tr.'s No. 1 McGhee Planting Co., 420 ft. S, 200 ft. W, NE cor. NE SW, Sec. 5-8-7..... S.D. 2,300 ft.

LITTLE RIVER COUNTY

Roberts Oil Co.'s No. 1 H. J. Russell, 330 ft. E, 330 ft. S, NW cor., Sec. 35-12-19.....Location.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26.....S.D.; W.O. 3,570 ft.

MILLER COUNTY

C. E. Litchfield's No. 1 Hervey, 525 ft. S, 350 ft. W, NE cor. NE NW, Sec. 2-15-26.....T.A. 2,885 ft.
Fitzwater et al's No. 1 Beck, Sec. 33-15-26.....T.A. 2,375 ft.
W. E. Noel et al's No. 1 Dickson hrs., 1,980 ft. W, 660 ft. S, NE cor., Sec. 11-20-27.....D.S. stuck 2,600 ft.

OUACHITA COUNTY

Copenhaven et al's No. 2 Berg, C SE SE, Sec. 13-15-17..W.O.S.R. 2,202 ft.
McLean et al's No. 1 L. D. Neely, Sec. 23-15-16, 200 ft. N and W, SE cor. NE SW.....S.D. 102 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14.....T.A. 2,909 ft.
E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24.....S.D.; W.O. 1,020 ft.
E. R. Henderson's No. 1 W. B. East, 200 ft. S, 150 ft. W, NE cor., Sec. 13-9-23..... Skidding over; to drill new hole.

PRAIRIE COUNTY

Powell Creek O. & G. Co.'s No. 1 Kloss, NE SW, Sec. 3-4n-6w .....Partly rigged up and S.D.

SCOTT COUNTY

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26.....S.D.; T.D. 1,436 ft.
Waldron O. & G. Co.'s No. 1 White, NE cor. SW NW, Sec. 17-3n-29 .....S.D. 1,860 ft.

SEVIER COUNTY

Tristate Oil Co.'s No. 1 Grimble, Sec. 34-8-32, S½ SW ..S.D. 950 ft.

ST. FRANCIS COUNTY

Field & Jones' No. 1 F. M. White, Sec. 1-4n-3e, SW cor. NW .....S.D. 700 ft.

UNION COUNTY

Drillers Oil & Dev. Co.'s No. 1 Pickering, 220 ft. N, 668 ft. E, SW cor. NW NE, Sec. 1-17-16.....T.A. 2,134 ft.
H. H. Helms' No. 1 C. H. Murphy, NE cor. NW NE, Sec. 31-16-14 .....S.D. 2,875 ft.
Pigeon Hill Oil Co.'s No. 1 Union Sawmill Co., 330 ft. S and W, NE cor. NW SW, Sec. 19-17-12.....Tested S.W. 2,587 ft.
Wilson & Chapman's No. 1 King, Sec. 3-18-13, 330 ft. N and E, SW cor. NE NE .....Derrick.
Wilson & Chapman's No. 1-A D. Norman, 330 ft. S and E, NW cor. N½ NE SE, Sec. 3-18-13..... S.D. 1,678 ft.

WASHINGTON COUNTY
(Cable tools)

C. H. Willoughby's No. 1 Jones, Sec. 24-16-30.....S.D. 1,795 ft.

YELL COUNTY
(Cable tools)

Tegmeier & Lockett's No. 1 Falcon, Sec. 36-7-21.....S.D. 5,710 ft.

EAST TEXAS
BOWIE COUNTY

Logan & Elliott's No. 1 Smith, 9,600 ft. S, 2,500 ft. W, NE cor. Chas. Lewis Sur. .....S.D. 4,505 ft.
Lanford et al's No. 1 W. W. Whybark, 200 ft. S, 200 ft. W, SW cor. J. H. Dyer Sur. .....S.D. 1,792 ft.
Lee Timberlake et al's No. 2 Tidwell, 2,510 ft. N, 655 ft. W, SE cor. T. M. Rice Sur. .....S.D. 3,000 ft.

CASS COUNTY

Davis & Pigg's No. 1 Roy Bryan, SW cor. Roy Bryan 33-ac. tr., Albert H. Lattimer Sur. .....Arranging to resume drlg. 2,860 ft
C. E. Murdock's No. 1 First National Bank, Evans Watson Sur. .....S.D. 4,390 ft.
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. ....S.D. 2,230 ft.
John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur. .....S.D. 960 ft.

HARRISON COUNTY

Lloyd Oil Corp.'s No. 1 E. S. Timmons, 150 ft. from N line to 250 ft. from E line of 105-ac. tr., Findley Sur. .....S.D. 4,195 ft.
M. E. Nash et al's No. 1 Henderson, G. L. Bledsoe Sur...Set 10-in. 85 ft.
Ryan Cons. Pet. Corp.'s No. 1 J. M. Fuhr, 1,300 ft. N of NW cor. T. J. Copelin Sur., 1,675 ft. SW at right angles to NW SE line of O'Neal Sur. .....Derrick.
Triangle Drlg. Co.'s No. 1 Platt, 1,125 ft. W, 1,995 ft. N, SE cor. F. C. Barker Sur. .....Location.

MARION COUNTY

Baunoch Dev. Co.'s No. 1 Miller, 725 ft. N, 1,479 ft. E, SW cor. H. Fulgram Sur. (was Gist, Claunch & Dodson) .....T.A. 4,120 ft.
Geo. Hindeman et al's No. 1 F. V. Lindsey, 2,500 ft. S, most northerly N line, 3,555 ft. E most easterly W line, Alexander Albright Sur. .....Arranging to resume drlg. 2,330 ft.
M. M. Howard's No. 1 Hussey, Chas. Lockhart Sur. .....Drlg. 50 ft.
Purcell et al's No. 1 Coker, M. Reed Sur. .....Drlg. red shale 1,957 ft.

PANOLA COUNTY

Moses & Wallace's No. 1 Daniel, 600 ft. N and W lines, Mrs. Gerrell 100-ac. tr., SW cor. Isabel Hanks Sur...S.D. for D.S. 740 ft.
J. L. Nelson et al's No. 1 J. Williams, 300 ft. S, 700 ft. W, NE cor. Williams' 67-ac. tr. in James Hanks Sur. .....S.D. 3,055 ft.

SHELBY COUNTY

Chapperell Oil Co.'s No. 2 Holt, Matthew Moore Sur. ....S.D. 3,951 ft.
Fuller & O'Brien Bros.' No. 1 Frost-Johnson Lbr. Co., 200 ft. S, 150 ft. W, NE cor. 168-ac. tr., Aaron Castleberry Sur. .....Dry and abd. 2,345 ft.
K. H. Francis' No. 1 John Mims, Mary Smith Sur. .....Skidding over for new hole.
General Minerals Corp.'s No. 2 Pickering Lbr. Co., 600 ft. N, 400 ft. E, SW cor. D. S. Height Sur. .....Coring sand 1,868 ft.
Henry Mauiding's No. 1 Frost Lbr. Co., NE cor. Frost Lbr. Co.'s 20-ac. tr., A. D. Fountain Sur. .....Skidding over for new hole.
McRoby et al's No. 1 Windham, Wm. Leach Sur., on Windham 296-ac. tr. .....Pulling 6⅝-in. csg. 3,393 ft.
Ridgeway et al's No. 1 Polley, Domingues Gonzales Sur., 3,180 ft. E of SW cor., 160 ft. N at right angles of Polley 457-ac. tr. .....Drlg. 1,742 ft.
Sedberry et al's No. 1 Pickering Lbr. Co., 600 ft. N, 400 ft. E, SW cor. Jane Stoddard Sur. .....S.D.; W.O. 1,768 ft.
C. H. Tautenhahn's No. 1 J. C. Bogard, 300 ft. S, 900 ft. E, NW cor. J. C. Bogard's 52-ac. tr., Thomas Baker Sur. .....S.D. 20 ft.
Western World's No. 1 Foster, Billingsby-Jeremiah Bowlin Sur. .....Drlg. 2,895 ft.
Wray & Dunbar's No. 1 C. A. Hayden, 600 ft. N and W SE cor. 152-ac. tr. in D. T. F. Yordt Sur. .....S.D.; W.O. 1,534 ft.

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA
CADDO PARISH—PINE ISLAND

Company, well, farm name, section and block—	Remarks:
Calatex O. & G. Co.'s No. 1 Scott, Sec. 5-16-16, 1,320 ft. E, 300 ft. N, SW cor.	Reaming to bottom 2,625 ft.
Simplex Oil Co.'s No. 1 Youree-Glassell, 500 ft. N and E, C, Sec. 13-20-15	Cmtd. back to 2,272 ft.

OUACHITA PARISH

Carbon Con.'s No. 7 Guthrie, Sec. 50-20n-4e, 5,263 ft. N, 7,475 ft. W of cors. of Secs. 25, 26 and 49, in Sec. 50 .....Location.

SABINE PARISH—ZWOLLE

O. J. Baird's No. 2 Duggan, Sec. 14-7-11, 200 ft. S and E from cen. Sec. .....W.O.S.R. 2,509 ft.
Baird Bros.' No. 1 S. Martinez, 122 ft. E, 476 ft. S, NW cor. NE SW, Sec. 2-7-13 .....Rigging up.
W. M. Coates' No. 1 LaRoux, 330 ft. N and E, SW cor. SE, Sec. 36-8-13 .....Derrick.
W. M. Coates' No. 1 Nulton, 224 ft. E, 330 ft. S, NW cor. SW NW, Sec. 1-7-13 .....Rigging up.
Crescent Drlg. Co.'s No. 4 Byrd, 200 ft. N and W, SE cor. NW NE, Sec. 12-7-11.....Comp. pumping 66 bbls. 2,521 ft.
Dengail O. & G. Co.'s No. 1 E. Nulton, 224 ft. E, 330 ft. N, SW cor. NW NW, Sec. 1-7-13.....W.O.S.R. 2,324 ft.
Dengail O. & G. Co.'s No. 1-F Nulton, 330 ft. S and E, NW cor. SW NW, Sec. 2-7-13.....Location.
Dengail O. & G. Co.'s No. 1-G Nulton, 350 ft. N, 330 ft. W, SE cor. NE NE, Sec. 3-7-13.....Fishing 2,065 ft.
Depression Oil Co.'s No. 1 Peters, 355 ft. N, 340 ft. W, SE cor. SW SW, Sec. 11-7-11.....Swbng. 2,558 ft.
M. L. Friend's No. 1 Eszernack, 250 ft. N, 330 ft. W, SE cor. N½ NE NE, Sec. 2-7-13 .....Set 6-in. 2,080 ft; drlg. 2,225 ft.
M. L. Friend's No. 1 Nulton, 300 ft. S and W, NE cor. SE NE, Sec. 2-7-13 .....Comp. flowing 200 bbls. 2,202 ft.
J. E. Grandstaff's No. 1 Johnson, S½ SW SW, Sec. 2-7-11. Drlg. 2,020 ft.
Lionel Hawkins' No. 3 Newton, 796 ft. N, 336 ft. E, SW cor. NE SE, Sec. 1-7-11 .....Location.
Independent Oil Co.'s No. 1 Cobb, 200 ft. S and W, NE cor. NW SW, Sec. 14-7-11 .....Location abd.
Zeke Lohman's No. 1 McCormick, 660 ft. E, 330 ft. N, SW cor. NE SW, Sec. 2-7-11.....S.D.; W.O. 2,680 ft.
Loring Oil Co.'s No. 18 Bowman-Hicks, 1,280 ft. S, 275 ft. E, NW cor. SW NW, Sec. 15-7-12.....Coring lime 5,075 ft.
Ben Merritt, tr.'s No. 1 Nulton, 400 ft. S and W, NE cor. SW NE, Sec. 2-7-13 .....Rigging up.
Pelican Nat. Gas Co.'s No. 11 La. Long Leaf Lbr. Co., Sec. 10-7-11, 330 ft. N and W, SE cor. NE NW.....W.O.S.R. 2,592 ft.
Pelican Nat. Gas Co.'s No. 13 La. Long Leaf Lbr. Co., 330 ft. N and W, SE cor. NE SE, Sec. 9-7-11.....Drlg. 2,431 ft.
F. G. Reid's No. 1-B McNeely, 400 ft. S, 110 ft. W, NE cor. NE NW, Sec. 14-7-11 .....Set 10-in. 100 ft; drlg. 1,480 ft.
C. T. Ruffian's No. 1 Lilley, 300 ft. S and W, NE cor. NW, Sec. 8-7-11 .....Set 6-in. 2,325 ft.
Sabine Prod. Co.'s No. 3 Pearce, Sec. 10-7-11, 330 ft. S and E. NW cor. SE NW.....S.D.; W.O. 2,699 ft.
Ben F. Smith's No. 1 fee, 330 ft. S, 400 ft. E, NW cor. Sec. 4-7-11 .....Derrick.
F. E. Stancil's No. 1 Pouder, 273 ft. S, 397 ft. E, NW cor. NE SE, Sec. 10-7-11 .....Derrick.
F. E. Stancil's No. 2 Pouder, 805 ft. N, 283 ft. E, SW cor. SE SE, Sec. 10-7-11 .....Location.

UNION PARISH

Interstate Nat. Gas Co.'s No. 2 Steele, 1,980 ft. W, 660 ft. N, SE cor., Sec. 26-20-3e.....Rigging up.
Interstate Nat. Gas Co.'s No. 3 Steele, 660 ft. S and E, NW cor. NE, Sec. 26-20-3e.....Location.
Southern Carbon Co.'s No. 59 fee, 660 ft. N, SE SW cor. SE, Sec. 17-20-4e.....Comp. 8,000,000 ft. gas 2,160 ft.

ARKANSAS
UNION COUNTY—EL DORADO

Southern Prod. Co.'s No. 1 Wingfield, NE cor. SE NW, Sec. 16-19-15 .....Drlg. 4,213 ft.

UNION COUNTY—URBANA

Marine Oil Co.'s No. 1 Winn est., 330 ft. S and E, NE cor. S½ NW, Sec. 11-18-13.....T.A. 3,586 ft.
Marine Oil Co.'s No. 2-E Thompson, 330 ft. N, 330 ft. E, SW cor. NE NE, Sec. 10-18-13.....Location.
Wilson & Chapman's No. 1-B Hadley, Sec. 3-18-13, 330 ft. S and W, NE cor. SE NW.....T.A. 3,545 ft.
Wilson & Chapman's No. 2 Emily King, Sec. 3-18-13, 150 ft. S, 150 ft. E, NW cor. NE NE.....S.D. 1,730 ft.

EAST TEXAS
PANOLA COUNTY

Daisy O. & G. Co.'s No. 1 Rucks, John Palmer Sur. .....S.D. 3,376 ft.
United Prod. Corp.'s No. 17 Steele, 1,320 ft. N, 660 ft. W, SE cor. C. D. Steele lse., in B. C. Jordan Sur. ....Location.

MISSISSIPPI
HINDS COUNTY

McGuire et al's No. 1 Spring Lake, Sec. 11-5n-1e, 250 ft. N, 450 ft. W, from center of Sec. .....T.A. 2,487 ft.

RANKIN COUNTY

Meredith-Smith et al's No. 3 Strawder, 400 ft. S, 750 ft. W, NE cor., Sec. 12-5n-1e.....Drlg. 205 ft.
Owen & Weaver's No. 1 Fitzhugh, 1,740 ft. E, 225 ft. N, SW cor., Sec. 1-5n-1e.....Drlg. plug 2,374 ft.

WILDCAT OPERATIONS IN MISSISSIPPI

CLARKE COUNTY

Company, well, farm name, section and block—	Remarks:
F. X. Gowans et al's No. 1 Elfring, SE NE, Sec. 13-1n-14e.	Drlg. 150 ft.

HINDS COUNTY

Atkins et al's No. 1 Crane Lawrence, Sec. 23-6n-1e, 300 ft. E, 132 ft. N, SW cor. NE SE.....Drlg. 2,387 ft.
Miss.-Minn. Oil Co.'s No. 1 Edwards Land Co., Sec. 23-6n-4w, 1,200 ft. N and E from center of Sec. .....Drlg. 2,930 ft.

JASPER COUNTY

Bay Springs Pet. Co.'s No. 1 Keyes, C NW NE, Sec. 2-12-9 .....T.A. 3,408 ft.

LAMAR COUNTY

Stauffer & Kouri's No. 1 Bond, SE NE, Sec. 18-2n-14w..Set 10-in. 1,067 ft; T.D. 1,090 ft.

LOWNDES COUNTY

Lowndes County Oil & Dev. Co.'s No. 1 Carr est., Sec. 34-17-16e, 1,320 ft. E, 330 ft. S, NW cor. Sec. .....Set 12½-in. 28 ft; arranging to test 1,040 ft.

NEWTON COUNTY

Bob Dalton's No. 1 Majure, 400 ft. N, 300 ft. E, SW cor. SE, Sec. 25-6n-11e.....S.D. 840 ft.

NOXUBEE COUNTY

Thompson & Donohue's No. 1 Donohue, Sec. 25-16n-17e..S.D. 1,735 ft.

RANKIN COUNTY

James Alexander, tr.'s No. 1 Holmas, 445 ft. E, 375 ft. N, SW cor. NW, Sec. 31-6n-2e .....Derrick.
Majestic O. & G. Co.'s No. 1 Elton Lbr. Co., Sec. 10-4n-3e. Derrick.
Orr et al's No. 1 Hanna, Sec. 14-5n-1e, 500 ft. E, 250 ft. S, NW cor. SW.....S.D. for casing 2,472 ft.

SCOTT COUNTY

M. U. Culley et al's No. 1 Owens, Sec. 2-8-9.....S.D. 190 ft.

SHARKEY COUNTY

United Gas Public Service Co.'s No. 1 Lenhart, Sec. 14-14n-6w, 660 ft. N of CSL of Sec. .....Dry and abd. 3,807 ft.

WARREN COUNTY

Eagle Bend O. & G. Co.'s No. 1 Kiger, SW cor. SW SE, Sec. 9-18-2 .....S.D. 2,607 ft.

WILDCAT OPERATIONS IN ALABAMA

CLARKE COUNTY

Company, well, farm name, section and block—	Remarks:
Tidal Oil Co. et al's No. 1 Hobson, Sec. 32-6n-2e	Drlg. 2,195 ft.

LAMAR COUNTY

Vernon O. & G. Corp.'s No. 1 Gardner, NW NW, Sec. 22-15s-16w .....Drlg. 1,545 ft.

WASHINGTON COUNTY

South Alabama O. & G. Co.'s No. 1 Wilson, Sec. 26-7n-1w. Rigging up.

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 64)

WEBSTER POOL—CALDWELL COUNTY

C. J. Webster Oil & Gas Co.'s No. 1 C. F. Robertson, 700 ft. from E line, 200 ft. from N line of 100-ac. tract, John A. Neill Sur. ..... Building derrick.

COLE POOL—DUVAL COUNTY

Cole Pet. Co.'s No. 75 Benavides, 365 ft. from NE line, 150 ft. from NW line, Blk. 8, Sec. 18, Mariana Arispe grant ..... T.D. 5,460 ft.; coring.

Co-operative Drilling Co.'s No. 8 John Dina, 264 ft. from N line, 150 ft. from W line of Blk. 5, Sur. 454.. T.D. 1,645 ft.; set csg.

GOVERNMENT WELLS—DUVAL COUNTY

H. H. Coffield's No. 1 H. Wendt, 150 ft. from S and E lines of NE of Sur. No. 43 ..... Spudded in.

Duval Oil Corp.'s No. 9 Bishop Cattle Co., 2,316 ft. to W line, 2,221 ft. to N line of Sur. No. 135 ..... T.D. 2,397 ft.; comp. 100 bbls.

Duval Oil Corp.'s No. 10 Bishop Cattle Co., 1,336 ft. from N line, 1,630 ft. from W line of Sur. No. 135 ... Location.

Humble Oil & Refining Co.'s No. 4 White, 2,310 ft. from S line, 1,320 ft. from W line of Sur. 58 ..... Location.

Humble Oil & Ref. Co.'s No. 5 Paul White, 1,980 ft. from W line, 990 ft. from S line of Sur. 58 ..... Derrick.

Magnolia Pet. Co.'s No. 1 G. Wendt, 150 ft. from S and E lines of NW Sur. 44 ..... Location.

Magnolia Pet. Co.'s No. 1 J. T. Johnson, 150 ft. from N and W lines of SW NE Sur. 44 ..... Location.

Southwest Drilling Co.'s No. 1 R. Wendt, 150 ft. from S and E lines of Sur. No. 43 ..... Location.

SARNOSA FIELD—DUVAL COUNTY

John F. Camp's No. 2 Well, 1,200 ft. N, 18 deg. W of No. 1 Well in Sur. No. 570 ..... Building derrick.

Magnolia Pet. Co.'s No. 1 M. Ruiz, 200 ft. from NW and SW lines of SE half of Sur. 574 ..... Location.

The Texas Co.'s No. 1 Ruiz, 150 ft. from NE and NW lines of Sur. No. 137 ..... Derrick.

Sun Oil Co.'s No. 1 Cano, 200 ft. from NW and NE lines of SE half of Sur No. 576 ..... Set surface csg.

SLICK POOL—GOLIAD COUNTY

T. B. Slick estate's No. 3 Allen, 1,650 ft. from NE line, 330 ft. from NW line of tr. in Obid Marshall Sur. .. T.D. 4,211 ft.; pulling liner to deepen.

DARST CREEK—GUADALUPE COUNTY

Humble Oil & Ref. Co.'s No. 4 Dan Denman, 500 ft. W of SW cor. of John F. Camp's 50-ac. lease, 150 ft. S of road, Wm. Arrington Sur. ..... T.D. 2,355 ft.; comp. 1,000 bbls.

Humble Oil & Ref. Co.'s No. 5-C Sue Denman, 525 ft. from E line, 600 ft. N of No. 4-C, Wm. Arrington Sur. ..... Rigged up.

Sun Oil Co.'s No. 2 Dowdy, 500 ft. from N line of tract 700 ft. from W line of tract and survey in Jacob C Darst Sur. ..... Moving in rig.

JACOB POOL McMULLEN COUNTY

Jacob, Buzzini & Pickett's No. 3-A Jacob, 749 ft. N, 75 deg. W of No. 2-A Jacob ..... T.D. 960 ft.; set csg.

Jacob, Buzzini & Pickett's No. 1-B Jacob, Sec. 15 G.H.&H. Ry. Sur. ..... Moving in rig.

Jacob, Buzzini & Pickett's No. 1-C Jacob, Sec. 47, J. Pointevant Sur. ..... Location.

Longhorn Oil Co. and American Gas Co.'s No. 1 Lark, 2,790 ft. from N line, 1,150 ft. from W line of Lark tract, E. W. B. Scrugham Sur. ..... Moving in.

ADAMS FIELD—MEDINA COUNTY

Yantis Oil Co.'s No. 1 Adams, 420 ft. from S line, 2,000 ft. from W line of F. Mumme Sur. ..... Location.

KING FIELD—NUECES COUNTY

John F. Camp and Stanolind Oil & Gas Co.'s No. 2 King, 660 ft. from S and E lines of Sec. 23 of King Subd.. T.D. 525 ft.; set surface csg.

SAXET FIELD—NUECES COUNTY

Gulf Coast Oil Co.'s No. 1 Perkins and LeGasse, 330 ft. from N and E lines of 245-ac. tr., Sec. 26, Shepard Subd. ..... T.D. 4,566 ft.; wild gasser.

Gulf Coast Oil Co.'s No. 1 Bessie Elder, offset to No. 1 Perkins & Gasse, a wild gasser ..... T.D. 900 ft.; drlg.

V. B. Hilliegeist's No. 1 McGregor, 150 ft. from W line, 330 ft. from S line of Sec. 311 ..... T.D. 4,210 ft.; drlg.

Rutherford Drlg. Co.'s No. 1 Hunter, 150 ft. from S and W lines of 10-ac. tr. ..... T.D. 4,807 ft.; tested salt water.

Saxet Oil Co.'s No. 5 Well, 3,041 ft. to N line, 333 ft. to W line ..... T.D. 2,500 ft.; standing.

Tule Lake Oil Co.'s No. 1 Hocker & Sevier, 200 ft. from E line, 150 ft. from S line of tract ..... T.D. 4,074 ft.; initial flowing at rate of 500 bbls.

ARANSAS POOL—SAN PATRICIO COUNTY

Atlantic Oil Prod. Co.'s No. 4 Welder, 1,900 ft. S, 30 deg. E of No. 3 Welder ..... Location.

WHITE POINT—SAN PATRICIO COUNTY

United Prod. Co.'s No. 3 Cage ..... T.D. 4,925 ft.; drlg.

LOS OLMOS POOL—STARR COUNTY

Allison & Roberts' No. 1 Kelsey Bass in Sec. 6, Subd. of Porciones 75, 76, 77 ..... Location.

Coastal Oil & Gas Co.'s No. 1 Kelsey-Bass, 697 ft. from W line, 873 ft. from N line of NW NW Sec. 5, Subd. of Porciones 75, 76 and 77 ..... T.D. 250 ft.; drlg.

Bennett O. & G. Co.'s No. 1 Seabury et al, Porcion 75.... Moving in.

H. H. Davis' No. 6 Kelsey Bass, 20 ft. from E line, 600 ft. from N line of SW NW Section 6, Subd. of Porcions 75, 76, 77 ..... Spudded in.

Day & Co.'s No. 1 Kelsey Bass, 150 ft. from S line, 400 ft. from W line of W 30 acres of NE NW of Sec. 6, Subd. of Porcions 75, 76, 77 ..... T.D. 487 ft.; set csg.

Felder, Mitchell & Barnsley's No. 1 Kelsey-Bass, in Sur. 8, Subd. of Porcions 75, 76 and 77 ..... T.D. 320 ft.; moving in larger rig.

Griffin et al's No. 1 Bass, 150 ft. from N and W lines of NW NW Sur. 11, Subd. Porcions 75, 76, 77 ..... T.D. 1,200 ft.; drlg.

Hooks & Weaver's No. 6 Kelsey Bass, 150 ft. from N and E lines of NE SW Sec. 6, Subd. of Porcions 75, 76, 77 ..... T.D. 468 ft.; set csg.

M. A. Landrum's No. 2 Kelsey-Bass, 519 ft. from S line, 150 ft. from E line of Sur. 6, Porcions 75, 76 and 77 ..... Location.

M. A. Landrum's No. 1 A. K. Bass, Sec. 6, 150 ft. to S and E lines of lease ..... Location.

Los Olmos Oil & Gas Co.'s No. 13 Kelsey Bass, 500 ft. from W line, 150 ft. from S line of NW NW Sur. 7, Porciones 75, 76, 77 ..... Location.

Tom C. Patton's No. 1 Kelsey-Bass, 150 ft. to W line, 150 ft. to S line of 20-ac. tract in NW NE of Subd. 8 of Porcions 75, 76 and 77 ..... T.D. 1,050 ft.; standing.

R. H. Pursley's No. 2 Seabury et al, 650 ft. from S line, 150 ft. from E line of Pursley 80-acre lease in Share 5 of Partition of Porcion 75 ..... T.D. 556 ft.; set csg.

Quien Sabe Oil Co.'s No. 1 Kelsey Bass, 300 ft. from N line, 750 ft. from W line of NE SW Section 8, Porciones 75, 76, 77 ..... Location.

Rio O. & G. Co.'s No. 3 Kelsey-Bass, No. 6 Subd., Porcions 75, 76 and 77 ..... T.D. 562 ft.; standing.

Sinclair & Rutherford's No. 1 Kelsey Bass, 150 ft. from S and W lines of SE NW Sec. 6, Subd. of Porcions 75, 76, 77 ..... T.D. 100 ft.; drlg.

RIO GRANDE CITY POOL—STARR COUNTY

Brady Drilling Co.'s No. 1 Rio Grande City, in center of city Plaza ..... Dropped; duplication.

Coastal Oil & Gas Co.'s No. 1 Olivaros, 150 ft. from NE and SE lines of easternmost corner of Share 35, Porcion 80, Camargo ..... Derrick.

Gulf Coast Oil Co.'s No. 1 Peres, 150 ft. from N and E lines of Share 16-C, Porcion 80, Camargo ..... Rigging up.

R. A. Hoffman's No. 1 Goodrich, 150 ft. from N and W lines of Blk. 6, Tract 5, Porcion No. 81 ..... Spudded in.

R. E. Johnson's No. 1 Seabury, 150 ft. from S and W lines of Share 32, Porcion 80, Jurisdiction of Camargo. T.D. 1,410 ft.; drlg.

Edwin M. Jones' No. 1 Chatfield, 200 ft. from N and E lines of N half of Blk. 3, Tract 21, Porcion 80, Camargo ..... T.D. 1,940 ft.; drlg.

King Pin Oil Co.'s No. 1 T. C. Lewis, 207 ft. from E line, 111 ft. from S line of Share 22, Porcion 80, Jurisdiction of Camargo ..... Derrick.

R. H. Pursley's No. 1 San Juan Plaza, csn. of Blk. 96, Rio Grande City ..... Location.

Sioux Oil Co.'s No. 3 Goodrich, 150 ft. from W line, 200 ft. from S line of Blk. 1, Tract 5, Porcion 80, Camargo. T.D. 1,500 ft.; standing.

WEST COLE POOL—WEBB COUNTY

French Oil Corp.'s No. 1 Benavides, 1,980 ft. from S line, 1,470 ft. from E line of Sur. 663 ..... Rigging up.

French Oil Corp.'s No. 4-A Benavides, 2,640 ft. from N line, 150 ft. from W line of Sur. 659 ..... T.D. 2,334 ft.; comp. 75 bbls

Magnolia Petroleum Co.'s No. 3-F Benavides, 200 ft. from N line, 150 ft. from E line of S half of Sur. 660 ..... T.D. 2,323 ft.; set csg.

CHAPMAN POOL—WILLIAMSON COUNTY

Westbrook Oil Co.'s No. 8-B Lawrence, 340 ft. NE of No. 7-B, and 150 ft. from SE line of 27-ac. tr. in S. Miller Sur. ..... T.D. 1,170 ft.; drlg.

R. A. Westbrook's No. 9 Simmons, 550 ft. along SE line of J. J. Sides' 10-ac. tr. from SW cor., thence 200 ft. SW at right angles and between Nos. 7 and 8 ..... T.D. 1,100 ft.; drlg.

Westbrook Oil Co.'s No. 9-B Lawrence, 340 ft. NE of No. 8-B and 150 ft. from SE line of 27-ac. tr. in S. Miller Sur. ..... Location.

ESCOBAS POOL—ZAPATA COUNTY

Allied Oil & Gas Co.'s No. 24 Gutierrez, 750 ft. from SE line, 1,478 ft. from NE line of Share 4, Comitas grant. T.D. 1,473 ft.; set csg.

Allied Gas Co.'s No. 25 Gutierrez, 150 ft. from NE line, 1,225 ft. from SE line of Share 4, Comitas grant .... T.D. 1,473 ft.; set csg.

E. K. Bateman's No. 1 M. Garza Estate, 150 ft. to NE and SE lines of Douglas Subd. of Comitas grant ..... Abnd. location.

E. R. Black & Paul S. Williams' No. 1 Comitas grant, 150 ft. from NW and NE lines of Blk. 100 ..... Abnd. location.

F. M. Blair & Son's No. 1 Montemayor, 450 ft. to N, 150 ft. to E line of Blk. No. 1, Sur. 63 ..... T.D. 1,462 ft.; drlg.

H. H. Coffield's No. 2 Santiago Bustamente, 150 ft. from SE and NE lines of Coffield 80-ac. lease, Share 34, Comitas grant ..... Location.

H. H. Coffield's No. 3 Santiago Bustamente, 450 ft. from SE line, 150 ft. from NE line of Coffield 80-ac., Share 34, Comitas grant ..... Location.

McGinley Corp.'s No. 2 G. T. Montemayor, 150 ft. from S and E lines of Blk. 2, Sur. 64 ..... T.D. 1,748 ft.; abnd.

McGinley Corp.'s No. 1 Jose Bustamente, 1,200 ft. to NE line, 150 ft. to NW line of 105.7-acre Henne, Winch & Farlss tract, Share 35, Comitas grant ..... T.D. 1,820 ft.; drlg.

McGinley Oil Corp., No. 1 G. T. Montemayor, 150 ft. from N and W lines of Blk. 6, Sur. 64 ..... Location.

O. W. Killam's No. 3 Medina, 1,130 ft. from NE line, 325 ft. from SE line of Share 34, Comitas grant .... T.D. 600 ft.; drlg.

S.R.C. Oil Co.'s No. 10-D Montemayor, 150 ft. from SW line, 987 ft. from N line of Blk. 9, Sur. 64 ..... T.D. 1,477 ft.; comp. 276 bbls.

S.R.C. Oil Co.'s No. 11-D Montemayor, Blk. 9, Sur. 64... T.D. 1,475 ft.; set csg.

The Texas Co.'s No. 8 Mesnies, 16,757 ft. from W line, 150 ft. from SE line of Cerrito Blanco grant ..... Rigging up.

CHARCO REDONDO POOL—ZAPATA COUNTY

Bob & Richey's No. 29 Martinez, 810 ft. from SW line, 360 ft. from SE line of Blk. 24, W. R. Duke Subd., Charco Redondo grant ..... Location.

Winsor Oil Co.'s No. 1 Martinez, in NE of Blk. 15, of W. R. Duke Subd., Charco Redondo grant ..... Location.

MIRANDO VALLEY—ZAPATA COUNTY

O. W. Killam's No. 1 Hinnant, 1,110 ft. from S line, 150 ft. from E line of Blk. 45, Sur. 613 ..... Location.

O. W. Killam's No. 5 fee, Sur. 182 ..... T.D. 752 ft.; drlg.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

Week Ending May 28

ATASCOSA COUNTY

Company, farm and location— Remarks:

American Central Oil Co.'s No. 2 Mary McConnell, 150 ft. W of E line, 300 ft. S of No. 1, Blk. 138, W. C. M. Baker Sur., 3 miles W and 6 miles S from Somerset.. T.D. 1,660 ft.; standing.

Glen Mathis' No. 2 Mrs. C. Martin, 100 ft. SE of No. 1... T.D. 2,980 ft.; standing.

BANDERA COUNTY

F. A. Brown's No. 1 R. B. Watson, western part of county ..... Rigging up.

BASTROP COUNTY

I. L. Champion's No. 1 Owens, 500 ft. to SE line, 600 ft. to SW line of 628-ac. tract, Isaac Cosner Sur.... T.D. 2,100 ft.; drlg.

Lonnie Evans and Dan Auld's No. 1 D. J. Orgain, 2,100 ft. from NW line, 2,775 ft. from SW line of Addison Littleton League ..... T.D. 1,783 ft.; drlg.

E. R. Marts and W. J. Beavens' No. 1 R. L. Carter, 450 ft. from NE line, 150 ft. from NW line of 100-ac. tract in George J. Glasscock Sur. ..... T.D. 2,524 ft.; abnd.

BEE COUNTY

Humble O. & R. Co.'s No. 1 Laura Thompson, 6,380 ft. from N line, 15,100 ft. from W line of tract in Garrett Rosche Sur., S part of county ..... T.D. 5,560 ft.; drlg.

J. L. Mauldin's No. 1 Kimball, 1,000 ft. NE of Grayburg Oil Co.'s No. 1-A Kimball in S. Winship Sur. ..... Location.

C. F. Nichols' No. 1 J. P. Harris, Durango grant east of Tulnta ..... T.D. 1,500 ft.; drlg.

Texas Gulf Producing Co.'s No. 1 Webb Hearn, 1,000 ft. N, 43 degrees E, thence 300 ft. NW at right angles from Huriburt's No. 1 Wood in P. T. Irrigation Co. Sur. ..... T.D. 3,500 ft.; drlg.

BELL COUNTY

J. W. Riley's No. 1 W. S. Chaffin, in M. Griffin Sur. .... T.D. 450 ft.; S.D.

BEXAR COUNTY

Amsden-Ingersoll-Miller's No. 1 Strumberg, 450 ft. to W line, 1,020 ft. to N line of tract, 12 miles SW of San Antonio ..... T.D. 810 ft.; S.D.

Lloyd Bender's No. 1 Suburban Irrig. Farms, 300 ft. No. of cen. of N line of K. K. Herring tract, 1 mile E of Kirk ..... T.D. 1,390 ft.; set csg.

S. W. Blount's No. 1-A S. A. Land & Dev. Co., 10 ft. from No. 1 in L. Peres Sur. ..... T.D. 900 ft.; drlg.

Eckert et al's No. 1 Edwards, 150 ft. to N and W lines of farm in Martinez Sur. ..... T.D. 1,490 ft.; standing.

Jones & Volts' No. 1 Bonkowsky, 150 ft. to N and W lines of William McMenenes Sur., 12 miles E of San Antonio ..... T.D. 907 ft.; standing.

Moore-Jauer's No. 1 Holly R. Ellison, 2,916 ft. from E line, 1,500 ft. from S line of farm in T. York Sur... T.D. 2,170 ft.; whipstocking.

Dr. Ewell Neil's No. 1 J. Watson, 500 ft. from W line, 1,700 ft. from S line of B. Martinez Sur. ..... T.D. 2,495 ft.; in Edwards, dry.

Schneider, Ress et al's No. 2 Claussen, 12 miles NE of San Antonio ..... T.D. 1,230 ft.; S.D.

BROOKS COUNTY

Allen & Morris' No. 1-A Holbien-Wormser, skidded rig a few feet from No. 1 ..... Set 250 ft. surface csg.

Ed East's No. 1 A. Garcia, 400 ft. from N and E lines of 2,168-ac. tract in SW part of county ..... T.D. 854 ft.; drlg.

Otto Wood's No. 1 Matilda Martinez, 2,230 ft. from E line, 2,070 ft. from N line of Longoria League ..... Location.

F. G. Stearns' No. 1 Mrs. B. Myrick, 610 ft. W, 150 ft. S of NE cor. of Lot 2, Blk. 2, Falfurrias Farm and Garden tracts 2 miles N of Falfurrias ..... T.D. 1,027 ft.; drlg.

CALDWELL COUNTY

George Sullivan and Shell Petroleum Corp.'s No. 1 Plinsoll, 2,800 ft. to SW line, 300 ft. to NW line of tract and survey in M. Dennis Sur. ..... Bldg. derrick.
Kistler, Stivers & Hendrick's No. 1 D. Carter, 400 ft. from NW line of Sur., 300 ft. NE of Creek in I. Allen Sur. ..... T.D. 1,485 ft.; standing in chalk.
Taylor Oil Co.'s No. 1 McBride, 12 miles NE Luling ..... T.D. 1,400 ft.; drlg.

COLORADO COUNTY

Coyle-Concord Oil Co.'s No. 1 Stewart Nelson in I.&G.N. Sur. No. 43 ..... T.D. 670 ft.; set surface csg.

DE WITT COUNTY

Pat Armstrong's No. 1 E. T. Clark, 2,000 ft. S of Simms-Republic's No. 1 Clark in Jose Santos Sur. ..... Moving in.
J. F. Richardson's No. 1 Virginia Taylor, 330 ft. from SE line of tract, 330 ft. NE of Minnehuilla Creek ..... Location.
The Texas Co.'s No. 1 John McCrabb, 4,000 ft. from SW line, 1,435 ft. from SE line of 794-ac. lease in James Quinn Sur. ..... T.D. 500 ft.; drlg.

DUVAL COUNTY

Aztec Oil & Royalty Co.'s No. 1 Duval County Ranch Co., 750 ft. from E line, 300 ft. from N line of S 160 ac. of Sur. 322 ..... Derrick.
French Oil Corp.'s No. 1 G. W. Dutherland in Sur. 506 ..... Location.
Hynes and Neesly's No. 1 Duval Ranch Co., 200 ft. from S and E lines of Blk. 26, Sur. No. 196 ..... T.D. 2,550 ft.; drlg.
O. W. Killam's No. 1 Peters, 150 ft. from E line, 450 ft. from N line of SE of Sur. No. 1 ..... T.D. 2,725 ft.; standing.
Plymouth Oil Co.'s No. 1 Parr, 6,250 ft. from W line, 1,925 ft. from S line of San Andres, Garcia grant ..... Rigging up.
Suttle et al's No. 1 Bennett, 150 ft. from N and E lines of Sur. No. 44 ..... T.D. 2,320 ft.; swabbing.
The Texas Co.'s No. 1 Peters, 2,330 ft. from N and W lines of Sur. 162 ..... Location.
The Texas Company's No. 1 Peters, 150 ft. from N and W lines of Sur. 162 ..... Location.

GUADALUPE COUNTY

J. E. Clark's No. 1 R. Drummer, 600 ft. from SE line, 150 ft. from SW line of tract in Francisco Caravajal Sur. No. 47 ..... Location.
Sal-Mar Oil Co.'s No. 1 Zunker, 450 ft. from W line, 170 ft. from S line of lease in L. Bollinger Sur. ..... Moving in.
Taylor Oil Co.'s No. 1 Pearson, S of Kingsbury ..... Spudded in.

GOLIAD COUNTY

Gulf Prod. Co.'s No. 1 J. O'Connor, 5,900 ft. from N line, 7,400 ft. from W line of D. Morris Sur. ..... T.D. 1,000 ft.; drlg.
Heffman & Gooch's No. 1 Fromme, 600 ft. from N and 1,200 ft. from W line of Peter B. Dexter Sur. ..... T.D. 2,470 ft.; standing.
Humble Oil & Ref. Co.'s No. 1 Fromme, 450 ft. from S line, 150 ft. from W line of lease on Geo. Kersey Sur. .. T.D. 2,675 ft.; drlg.
Plymouth Oil Co.'s No. 2 Parks, 400 ft. S of No. 1 Parks in Solomon Parks Sur. ..... T.D. 5,137 ft.; set csg.
Neal et al's No. 1 J. M. Pettus, 10,700 ft. to S line, 2,500 ft. to E line of Pedro Trevino Sur. ..... T.D. 4,565 ft.; standing.

GONZALES COUNTY

Crowder Oil Co.'s No. 1 Preston, 1,000 ft. from W line, 2,000 ft. from N line of W. W. Pace Sur. ..... T.D. 200 ft.; standing.
Edmiston & Kirby Petroleum Co.'s No. 1 J. W. Ward, Jr., 200 ft. from N and W lines of tract in Dan McKay Sur. ..... T.D. 1,529 ft.; S.D
Johnson & Mattock's No. 1 J. James, 12 miles NE of Gonzales city, 900 varas from E line, 300 ft. from S line of tract in M. A. Williams Sur. ..... T.D. 2,300 ft.; reaming.

HIDALGO COUNTY

Barrett-Kanellos' No. 1 J. B. Brock, 7 miles W and N from Mission (on Monte Cristo road) ..... T.D. 4,475 ft.; coring.
San Roman Oil Co.'s No. 1 J. T. Lomax, 7,500 ft. from S and E lines of San Roman Sur. ..... T.D. 2,500 ft.; S.D.
Dayle L. Smith's No. 3 Daskam, SW part of county ..... T.D. 1,726 ft.; S.D.

JIM HOGG COUNTY

Borah, Allen & Co.'s No. 1 E. Guerra, 150 ft. to S and W lines of Blk. 6, Sur. 86 ..... T.D. 1,800 ft.; drlg.
Clark & Cowden's No. 1 E. Vela, Share 1 El Peyote grant. Rigging up.
D. C. DeWitt's No. 1 Gomez, 1,170 ft. from N line, 150 ft. from W line of Sur. No. 12, SW part of county .. T.D. 1,457 ft.; no report.
Duval Oil Co.'s No. 1 W. W. Jones, 1,020 ft. from S and W lines of 160-ac. tract in Holden Subd. of Share 5-A in San Diego Hinajosa grant ..... Location.
Grayburg Oil Co.'s No. 1 J. Well, Sur. 83 ..... T.D. 900 ft.; drlg.

JIM WELLS COUNTY

Carroll Brown's No. 1 Seefeld, 900 ft. from W line, 600 ft. from S line of Seefeld farm, Lot 4-2, Pointevant Sur. No. 205 ..... Location.
F. A. Lain's No. 1 Vernon Porter, 800 ft. from S line, 400 ft. from W line of 200-ac. tract in Sur. 25 ..... Derrick blown down.
S. J. Sloane's No. 1 W. Wade, 150 ft. SW of cen. of NE line of Lot 6, Blk. C of Wade ranch, C. Blanca Sur.. T.D. 1,100 ft.; drlg.
M. E. Trussell et al's No. 1 W. T. Wright, 250 ft. from W line, 150 ft. from N line of NW 200 ac. of W. T. Wright, 3,000-ac. El Carro pasture ..... Location.

KARNES COUNTY

A. E. Edmiston's No. 1 O. L. Cochran, 150 ft. from S line, 500 ft. from E line of farm in D. B. McConnell Sur. ..... T.D. 1,520 ft.; standing.
Nichols Oil Co.'s No. 1 Newberry, 210 ft. S, 60 de. E from Fort Bend Oil Co.'s No. 1 Newberry ..... T.D. 3,300 ft.; S.D.
Pickett et al's No. 1 D. E. Lyons in Victor Blanco Sur. ..... Drlg. 2,100 ft.

KERR COUNTY

Eastland Oil Co.'s No. 1 Love, 600 ft. E of No. 1 Love in J. Martinez Sur. No. 1,594 ..... Spudded in.
Evans & Gant's No. 1 E. Young, A. R. Burg Sur. 28 .... T.D. 1,312 ft.; standing.
Verde O. & G. Co.'s No. 1 J. D. Witt, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 1,923, Hamilton Sur., 4 miles from Center Point; T.D. 300 ft; carried to this depth and abandoned as Herber Oil Co.'s No. 1 J. D. Witt ..... T.D. 110 ft.; standing.

KLEBERG COUNTY

H. Carter et al's No. 1 R. H. Simmons, in Sec. 7, King Sur. No. 3 ..... T.D. 3,205 ft.; standing; derrick blew down.

LA SALLE COUNTY

Frank Clark's No. 1 Coleman, 200 ft. from S and E lines of Blk. 15, Sur. No. 514 ..... T.D. 40 ft.; set surface pipe.

LIVE OAK COUNTY

Catlett & O'Neill's No. 1 H. D. Miller, 2,400 ft. from SW line, 6,125 ft. from NW line of Miller ranch in SE part of county ..... T.D. 500 ft.; drlg.
J. A. Harper's No. 1 fee, 2,130 ft. to N line, 510 ft. to E line of farm, J. Pointevant Sur. 37 ..... Spudded in and standing.

LEE COUNTY

Washington-Lee Oil Co.'s No. 1 Hicket, 1,100 ft. from N line, 200 ft. from E line of tract in J. D. Varrelman Sur. ..... T.D. 1,580 ft.; S.D.

MEDINA COUNTY

Robertson Drilling Co.'s No. 1 Little, 2,350 ft. from N line, 1,500 ft. from E line of E. H. Rutledge Sur., southern part of county ..... Spudded in.

MILAM COUNTY

Birdwell et al's No. 1 E. and J. S. Williams, 150 ft. from N and E lines of 46-ac. tr. in Samuel P. Carson Sur., 5 miles SW of Rockdale ..... T.D. 3,600 ft.; set csg.
H. W. Elliott's No. 1 Marek, 767 ft. from N line, 500 ft. from W line of 160-ac. tr. in B. Wickson Sur. ..... T.D. 3,000 ft.; S.D.
Keyser & Roberts' No. 3 Ward, 125 ft. NE of No. 2 Ward, in Levi Taylor Sur. ..... Derrick.
Michalk & Clark's No. 1 Johnson, 80 ft. S of No. 1 Johnson on 100-ac. lease in Juan Jose Acosta Sur. .. T.D. 1,750 ft.; drlg.
Keyser & Nichols' No. 1 Irwin, 450 ft. from NW line, 150 ft. from NE line of 126-ac. tract in Levi Taylor Sur. ..... T.D. 200 ft.; drlg.

NUECES COUNTY

C. E. McCarthy's No. 1, W of Corpus Christi ..... Dropped till operations start.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW, Sec. 175 ..... T.D. 2,530 ft.; washing down to deepen.

SAN PATRICIO COUNTY

John F. Camp's No. 1 Jackson, SW cor. SW, Sec. 30, 3 miles from Edroy ..... T.D. 5,507 ft.; S.D.; contract depth.

STARR COUNTY

Coastal O. & G. Co.'s No. 1 Kelsey-Bass, 448 ft. to N. line, 150 ft. to W line of Tract 52, Sur. 2, Porcion 86 .. T.D. 705 ft.; drlg.
Davenport et al's No. 1 Wells, 30 miles W of Mission .. T.D. 1,093 ft.; csg. stuck.
Frank LaBorde's No. 1 Juan Marroquin, 1,260 ft. from E line, 1,225 ft. from S line of Share 21 of W two-thirds of Porcion 75 ..... T.D. 516 ft.; drlg.
Sinclair & Rutherford's No. 1 J. T. Canales, 150 ft. from S and W lines of Share 69 of W half of Porcion 79, Camargo ..... Derrick.
Stryalls Oil Corp.'s No. 1 M. E. Salinas, 155 ft. from N and W lines of lease in Porcion 80, Share 33 .... T.D. 2,050 ft.; drlg.
Strayhorn Oil Co.'s No. 1 Caffarelli, Porcion 80 ..... Spudded in.
Stryalls No. Corp.'s No. 1 Margo, 150 ft. from N and E lines of Share 27 of Subd. of Porciones 80 and 81, Jurisdiction of Camargo ..... Rigging up.
R. B. Suttle's No. 1 Guerra, 2,000 ft. to N line, 270 ft. to W line of Porcion 110 ..... T.D. 810 ft.; no report.
Jack Tarver's No. 1 Guerra, NE of Rio Grande City .... T.D. 2,591 ft.; plugging back to 2,146 ft.
E. L. Williams' No. 1 L. G. Madrigal, 150 ft. from N and W lines of Share 5-A of Porcion 72 of Jurisdiction of Mier ..... T.D. 212 ft.; drlg.
Jess Williams' No. 1 Welch, 1,120 ft. to W line, 1,500 ft. to N line of tr. in Pedernal grant ..... T.D. 840 ft.; drlg.

TRAVIS COUNTY

C. R. Franklin et al's No. 1 J. Wilson, 160 ft. from N and W lines of farm in A. Alexander Sur. ..... T.D. 1,210 ft.; S.D.
Fritz Fuchs' No. 1 Swedish, 2,350 ft. from NE line, 750 ft. from NW line of Thomas Smith Sur. ..... T.D. 900 ft.; S.D.
Ray & Henze's No. 1 Hatech, in C of tr. in S. Hamilton Sur. ..... T.D. 900 ft.; abnd.
Ray & Orth's No. 1 Lundgren, 550 ft. from N line, 150 ft. from W line of 133-ac. tr. in L. Kimbro Sur. .... T.D. 478 ft.; drlg.

WEBB COUNTY

McGinley Corp.'s No. 1 A. C. Billings, 450 ft. from N line, 150 ft. from W line of SW NE Sur. No. 71 .... T.D. 800 ft.; drlg.
Phillips Rosenberg's No. 1 Green, 245 ft. from S line, 450 ft. from E line of Sur. No. 233 ..... T.D. 1,962 ft.; drlg.
Phillips Rosenberg's No. 1 Laurel, 291 ft. from E and N lines of Blk. 10, Sur. 271 ..... T.D. 3,100 ft.; drlg.
Phillips Rosenberg's No. 2 Laurel, 150 ft. from N and W lines of Blk. 8, Sur. 271 ..... T.D. 2,130 ft.; drlg.
E. R. Thomas' No. 1 Welder-Wood, 300 ft. from S and E lines of Sur. 383 ..... Location.
Thompkins et al's No. 1 Ortiz, 200 ft. from E line, 2,000 ft. from N line of Sur. No. 1,868 ..... T.D. 520 ft.; drlg.

WILLIAMSON COUNTY

McLean et al's No. 2 R. C. Miller, 800 ft. to S line, 100 ft. to W line of tr. in B. Manlove Sur. ..... T.D. 400 ft.; S.D.
McNeill & Matthews' No. 1 Bachmayer, 300 ft. from E line, 150 ft. from S line of C. C. Browning Sur. ... T.D. 1,700 ft.; drlg.
G. B. Peterman's No. 1 Guentzel, 300 ft. from SE line, 867 ft. from SW line of tract in H. Cooks Sur. ..... T.D. 2,132 ft.; drlg.
G. L. Rowsey's No. 1 Streit, 450 ft. from SW line, 150 ft. from NW line of tract in J. West Sur. ..... T.D. 1,870 ft.; abnd.

WILSON COUNTY

A. M. Blume's No. 1-A Nicholson, 105 ft. N, 27 deg. E of No. 1 Johnson ..... Location.
Sun Oil Co.'s No. 1 Tudyk, 650 ft. from W line, 500 ft. from S line of 157-ac. tract in John Turner Sur. .... Location.

ZAPATA COUNTY

Ballard & Mercer's No. 1 Flores, 500 ft. from NE line, 580 ft. from SE line of Blk. 27, Porcion 37 ..... T.D. 2,497 ft.; recementing csg.
Joe Cullinan's No. 1 E. Gutierres, 1,992 ft. from NE line, 2,303 ft. from SE line of Charco de la India grant ..... T.D. 40 ft.; set surface csg.
Donohoo et al's No. 1-A Garcia, 150 ft. from NE and SE lines of Blk. 7 of Subd. of 700 ac. of Share A, Charco Redondo grant ..... Rigging up.
Hunt & Polk's No. 1 H. Ramirez, 7,075 ft. N of S cor. and 2,918 ft. from W line of Share A of Villa grant.. T.D. 560 ft.; drlg.
McGinley Corp.'s No. 1 G. G. Flores, 750 ft. SW of E cor. and 150 ft. from SE line of Sur. 242 but in Sur. No. 250 ..... T.D. 1,405 ft.; drlg.
T. J. Murray's No. 1 Haynes, 2,915 ft. from NE line, 2,619 ft. from NW line of Comitas grant ..... Derrick.

BUREAU OF MINES STATISTICS FOR THE MONTH OF MARCH, 1932

NUMBER OF WELLS COMPLETED IN THE UNITED STATES*

	Mar., 1932	Feb., 1932	Mar., 1931	Jan.-Mar., 1932	Jan.-Mar., 1931
Oil	670	575	383	1,888	1,320
Gas	91	99	182	314	602
Dry	245	239	381	681	1,219
Total	1,006	913	946	2,883	3,141

*From The Oil and Gas Journal and California office of the American Petroleum Institute.

INDICATED DOMESTIC DEMAND FOR CRUDE PETROLEUM EAST OF CALIFORNIA
(Thousands of barrels of 42 U. S. gallons)

Domestic petroleum by fields of origin:	March., 1932 Total	March., 1932 Daily av.	Feb., 1932 Total	Feb., 1932 Daily av.	Jan.-Mar., 1932	Jan.-Mar., 1931
Appalachian:						
Pennsylvania Grade	1,847	60	1,573	54	5,102	5,177
Other (inc. Kentucky)	672	22	556	19	2,052	2,123
Lima-Northeast Ind.-Mich	633	20	487	17	1,640	895
Illinois-Southwest Indiana	342	11	291	10	948	1,359
Mid-Continent:						
North Louisiana and Ark.	1,981	64	1,762	61	6,980	9,698
W. Tex.-S. E. New Mex.	6,792	219	6,328	218	20,501	29,234
Other (Okla., Kans., N. Tex., etc.)	34,526	1,114	32,250	1,112	100,818	89,609
Gulf Coast	4,385	141	4,055	140	12,193	17,008
Rocky Mountain	1,107	36	1,133	39	3,558	4,393
California	....	....	....	....	.....	.....
Total demand	52,285	1,687	48,436	1,670	153,792	159,496
Exports	1,145	37	977	34	3,021	3,061
Domestic demand	51,140	1,650	47,459	1,636	150,771	156,435
Foreign petroleum	1,650	53	4,013	138	8,156	12,176
Total domestic demand east of California	52,790	1,703	51,472	1,774	158,927	168,610

(Continued on Next Page)

SUPPLY AND DEMAND OF ALL OILS

(Including wax, coke and asphalt in thousands of barrels of 42 U. S. gallons)

NEW SUPPLY:	March, 1932	February, 1932*	March, 1931	Jan.-Mar., 1932	Jan.-Mar., 1931
Domestic production:					
Crude petroleum	67,189	62,484	69,397	196,557	195,775
Daily average	2,167	2,155	2,239	2,160	2,175
Natural gasoline	3,196	3,148	4,048	9,688	11,819
Benzol	124	119	194	368	550
Total production	70,511	65,751	73,639	206,613	208,144
Daily average	2,275	2,267	2,376	2,271	2,313
Imports:					
Crude petroleum	4,840	4,708	3,715	11,595	12,857
Refined products	4,028	3,536	4,065	11,114	10,583
Total new supply, all oils	79,379	73,995	81,419	229,322	231,584
Daily average	2,561	2,552	2,626	2,529	2,573
Increase in stocks, all oils	†21	959	†1,547	341	9,829
DEMAND:					
Total demand	79,400	73,036	82,966	228,981	241,413
Daily average	2,561	2,518	2,676	2,516	2,682
Exports:					
Crude petroleum	2,080	1,897	1,586	5,579	5,215
Refined products	7,051	5,892	7,241	19,973	25,324
Domestic demand	70,259	65,247	74,139	203,429	210,874
Daily average	2,266	2,250	2,392	2,235	2,343
Excess of daily average domestic production over domestic demand	9	17	†17	36	†30
STOCKS (end of month):					
Crude petroleum:					
East of California	329,595	327,077	357,663	329,595	357,663
California‡	42,259	42,311	43,907	42,259	43,907
Total crude	371,854	369,388	401,570	371,854	401,570
Natural gasoline	4,039	3,508	3,899	4,039	3,899
Refined products‡	257,323	260,232	251,564	257,323	251,564
Grand total stocks, all oils	633,107	633,128	656,833	633,107	656,833
Days' supply	247	251	245	253	245
Bunker oil (included above in domestic demand)	3,499	3,136	3,666	9,666	10,832

*Revised. †Decrease. ‡Deficiency. §California heavy crude and residual fuel included under refined products.

STOCKS OF CRUDE PETROLEUM

(Thousands of barrels of 42 U. S. gallons)

EAST OF CALIFORNIA:	Mar. 31, 1932	Feb. 29, 1932	Mar. 31, 1931
At refineries by location:			
East Coast: Domestic	7,787	8,296	9,321
Foreign	6,402	3,660	3,437
Appalachian	2,157	2,010	2,481
Indiana, Illinois, Kentucky, Michigan	3,540	3,935	2,581
Oklahoma, Kansas and Missouri	5,553	5,776	5,146
Texas: Inland	1,328	1,415	1,367
Gulf Coast: Domestic	6,900	7,012	7,502
Foreign	197	227	345
Arkansas and inland Louisiana	485	464	429
Louisiana Gulf Coast: Domestic	2,530	2,488	5,591
Foreign	1,344	846	753
Rocky Mountain	1,982	1,946	1,843
Total	40,211	38,085	40,786
At refineries by origin:			
Pennsylvania Grade	2,066	1,911	2,214
Other Appalachian (including Kentucky)	778	736	782
Lima, northeast Indiana, Michigan	189	239	162
Illinois-southwest Indiana	138	142	94
North Louisiana and Arkansas	1,464	1,479	2,605
West Texas and southeast New Mexico	3,575	3,700	4,792
Oklahoma, Kansas, North Texas, etc.	17,804	18,425	16,224
Gulf Coast: Grade A	1,428	1,342	3,001
Grade B	3,005	3,597	3,534
Rocky Mountain	1,831	1,771	1,838
California	.....	.....	5
Foreign	7,933	4,743	4,535
Total	40,211	38,085	40,786
Pipe line and tank farm:			
Pennsylvania Grade	4,814	5,011	5,681
Other Appalachian (including Kentucky)	995	1,029	1,043
Lima, northeast Indiana, Michigan	1,591	1,623	1,579
Illinois-southwest Indiana	10,375	10,147	10,249
North Louisiana and Arkansas	15,606	15,744	19,128
West Texas and southeast New Mexico	34,168	34,087	42,175
Oklahoma, Kansas, North Texas, etc.	177,834	177,577	187,238
Gulf Coast	12,651	13,555	17,514
Rocky Mountain	24,100	23,719	25,770
Total	283,134	282,492	310,377
Total refinery, pipe line and tank farm	323,395	320,577	351,163
Producers' stocks	6,200	6,500	6,500
Total crude east of California	329,595	327,077	357,663
CALIFORNIA: Light	42,259	42,311	43,907
Total crude	371,854	369,388	401,570

RECORD OF WELLS FOR IMPORTANT FLUSH FIELDS, MARCH, 1932*

	Completions: Oil	Gas	Dry	Total initial prod. (Barrels)	Average initial prod. (Barrels)	Drlg. Mar. 31
Texas	458	17	108	42,800	100	733
East Texas†	373	1	20	1,007,100	2,700	283
Gulf Coast	22	0	14	8,000	400	69
West Texas	7	0	6	1,400	200	79
California	16	0	28	2,800	200	126
Kettleman Hills	0	0	0	.....	...	9
Long Beach	2	0	7	.....	...	8
Playa Del Rey	0	0	4	.....	...	1
Oklahoma	41	12	26	28,100	900	248
Oklahoma County	3	0	1	28,300	3,500	47
Pottawatomie-Seminole Counties	7	0	0	6,200	900	17
New Mexico	4	0	0	25,200	6,300	43
Lea County (Hobbs)	2	0	0	25,100	12,600	3
Other states	151	62	82	19,400	100	859
Total United States	670	91	245	128,300	200	2,009

*From The Oil and Gas Journal and California office of the American Petroleum Institute. †Initial production for the East Texas Field calculated from field reports.

SHIPMENTS FROM CALIFORNIA TO EASTERN PORTS IN UNITED STATES*

(Thousands of barrels of 42 U. S. gallons)

	Mar., 1932	Feb., 1932	Mar., 1931	Jan.-Mar., 1932	Jan.-Mar., 1931
Gasoline	1,046	186	1,643	1,721	3,948
Natural gasoline	....	....	....	73	296
Kerosene	....	....	42	....	88
Gas oil and Diesel oil	117	....	192	117	753
Fuel oil	....	....	....	....	2
Lubricants	....	8	12	19	26
Asphalt	1	1	2	3	4
Miscellaneous	1	....	....	2	....
Total	1,165	199	1,892	1,936	5,217

*Compiled by E. T. Knudsen of the San Francisco office of the Bureau of Mines.

COMPARATIVE ANALYSES

(Thousands of barrels of 42 U. S. gallons)

CRUDE PETROLEUM:	March, 1932 Total	March, 1932 Dy.av.	Feb., 1932* Total	Feb., 1932* Dy.av.	Jan.-Mar., 1932	Jan.-Mar., 1931
Runs to stills: Domestic	65,266	2,105	60,635	2,091	191,272	196,675
Foreign	3,236	104	3,179	110	9,759	12,497
Total	68,502	2,209	63,814	2,201	201,031	209,172
Imports	4,840	156	4,708	162	11,595	12,857
Exports	2,090	67	1,897	65	5,579	5,215
MOTOR FUEL:						
Production	32,349	1,044	31,704	1,093	97,386	99,282
Imports	1,127	36	1,195	41	3,546	3,671
Exports	3,039	98	2,849	98	9,310	11,456
Stocks	†62,920	....	†61,934	....	†62,920	48,340
Domestic demand	29,451	950	25,344	874	80,991	83,256
KEROSINE:						
Production	3,535	114	3,200	110	10,533	10,407
Imports	.....	...	4	....	4	2
Exports	890	29	739	25	2,843	3,433
Stocks	4,539	...	4,971	....	4,539	6,300
Domestic demand	3,067	99	2,798	96	8,477	7,559
GAS OIL AND DISTILLATE FUELS:						
Production	6,353	205	5,599	193	18,313	22,411
Stocks	13,078	....	13,623	....	13,078	14,064
RESIDUAL FUEL OILS:						
Production	19,575	631	17,836	615	57,514	61,656
Stocks‡	114,173	....	115,817	....	114,173	114,676
LUBRICANTS:						
Production	1,946	63	1,984	68	6,022	6,770
Imports	2	....	4	....	6	6
Exports	616	20	599	21	1,831	1,791
Stocks	9,355	....	9,747	....	9,355	10,710
Domestic demand	1,724	56	1,199	38	4,327	5,248
WAX (thousands of pounds):						
Production	47,040	1,517	48,440	1,670	139,160	118,720
Imports	2,696	119	3,294	286	16,576	6,969
Exports	15,888	513	17,507	604	56,364	76,036
Stocks	195,412	....	188,688	....	195,412	208,620
Domestic demand	28,124	907	39,015	1,345	84,503	73,625
COKE (short tons):						
Production	145,700	4,700	141,400	4,876	432,000	430,200
Stocks	1,436,100	....	1,440,300	....	1,436,100	1,089,100
ASPHALT (short tons):						
Production	180,600	5,826	130,900	4,482	441,700	503,300
Imports (natural)	2,400	77	900	31	4,300	.....
Stocks	351,200	....	313,400	....	351,200	354,100
ROAD OIL:						
Production	171	6	88	3	413	331
Stocks	618	....	509	....	618	371
STILL GAS:						
Production	3,200	103	3,029	104	9,436	8,109
MISCELLANEOUS:						
Production	796	26	261	9	1,322	843
Stocks	1,104	....	779	....	1,104	695

*Revised. †Includes terminal and transit stocks, pipe line stocks, and stocks of motor blends held at natural gasoline plants. ‡Includes heavy crude in California.

PRODUCTION OF CRUDE PETROLEUM BY STATES

(Thousands of barrels of 42 U. S. gallons)

	March, 1932 Total	March, 1932 Dy.av.	Feb., 1932 Total	Feb., 1932 Dy.av.	Jan.-Mar., 1932	Jan.-Mar., 1931
Arkansas	1,004	32	960	33	2,947	4,342
California:						
Kettleman Hills	1,857	60	1,736	60	5,461	2,248
Long Beach	2,560	82	2,360	81	7,335	8,324
Santa Fe Springs	2,042	66	1,920	66	5,986	6,422
Rest of State	9,117	293	8,601	297	26,943	30,788
Total California	15,576	502	14,617	504	45,725	47,782
Colorado	116	4	107	4	337	400
Illinois	450	15	415	14	1,296	1,157
Indiana:						
Southwestern	66	2	69	2	204	192
Northeastern	3	....	2	....	8	12
Total Indiana	69	2	71	2	212	205
Kansas	2,879	93	2,736	94	8,569	9,425
Kentucky	518	17	470	16	1,486	1,681
Louisiana:						
Gulf Coast	899	29	782	27	2,560	2,455
Rest of State	808	26	777	27	2,376	3,642
Total Louisiana	1,707	55	1,559	54	4,936	6,097
Michigan	459	15	407	15	1,337	795
Montana	209	6	209	7	593	748
New Mexico	1,152	37	1,079	37	3,401	3,453
New York	303	10	293	10	918	824
Ohio:						
Central and Eastern	299	10	278	9	869	1,136
Northwestern	90	3	82	3	256	287
Total Ohio	389	13	360	12	1,125	1,423
Oklahoma:						
Oklahoma City	3,443	111	2,883	100	10,065	9,695
Seminole	3,867	125	3,729	128	11,487	13,935
Rest of State	6,019	194	5,875	203	18,054	22,668
Total Oklahoma	13,329	430	12,478	431	39,606	46,298
Pennsylvania	1,040	33	973	33	3,075	2,688
Tennessee	.....	....	.....	....	1	3
Texas:						
Gulf Coast	3,080	100	3,038	105	9,394	13,314
West Texas	5,639	182	5,328	184	16,358	22,157
East Texas	10,529	340	9,044	312	29,427	3,655
Rest of State	7,246	233	6,950	239	21,412	24,346
Total Texas	26,494	855	24,360	840	76,591	63,472
West Virginia	325	10	305	11	963	1,101
Wyoming:						
Salt Creek	676	22	648	22	2,051	2,338
Rest of State	494	16	437	15	1,388	1,543
Total Wyoming	1,170	38	1,085	37	3,439	3,881
Total United States	67,189	2,167	62,484	2,155	196,557	195,775

PRODUCTION OF CRUDE PETROLEUM BY FIELDS

(Thousands of barrels of 42 U. S. gallons)

FIELD:	March, 1932 Total	March, 1932 Daily av.	Feb., 1932 Total	Feb., 1932 Daily av.	Jan.-Mar., 1932	Jan.-Mar., 1931
Appalachian:						
Pennsylvania Grade	1,805	58	1,702	58	5,365	5,171
Other (inc. Kentucky)	680	22	617	21	1,947	2,262
Lima-Northeast Ind.-Mich.	552	18	491	19	1,601	1,094
Illinois-Southwest Indiana	516	17	484	18	1,500	1,350
Mid-Continent:						
North Louisiana and Arkansas	1,812	58	1,737	60	5,323	7,984
W. Tex.-S. E. New Mex.	6,762	218	6,374	220	19,564	25,481
Other (Okla., Kans., N. Tex., etc.)	32,983	1,096	31,208	1,076	99,014	83,724
Gulf Coast	3,979	129	3,820	132	11,954	15,769
Rocky Mountain	1,524	49	1,434	49	4,464	5,158
California	15,576	502	14,617	504	45,725	47,782
Total	67,189	2,167	62,484	2,155	196,557	195,775

(Continued on Next Page)

IMPORTS AND EXPORTS OF CRUDE PETROLEUM AND MAJOR REFINED PRODUCTS*

(Thousands of barrels of 42 U. S. gallons)

	Mar., 1932	Feb., 1932	Mar., 1931	Jan.-Mar., 1932	Jan.-Mar., 1931
CRUDE PETROLEUM:					
Imports	4,340	4,708	3,715	11,595	12,857
From Mexico	1,084	647	240	2,363	1,007
From Venezuela	2,755	2,326	1,850	6,349	6,836
From Colombia	935	1,670	1,367	2,690	4,358
From other countries	66	65	258	293	656
Exports:					
Domestic crude oil	2,090	1,897	1,586	5,579	5,215
To Canada	1,403	1,168	1,180	3,698	3,924
To other countries	687	729	406	1,878	1,291
Shipments	....	....	....	3	....
REFINED PRODUCTS:					
Gasoline:					
Imports	1,127	1,195	1,607	3,546	3,671
Exports†	3,039	2,849	2,946	9,310	11,455
To United Kingdom	1,065	718	751	2,883	3,778
To France	399	319	320	1,415	1,612
To Canada	147	179	146	446	504
To other countries	1,302	1,625	1,627	4,369	5,286
Shipments	126	8	102	257	275
Kerosene:					
Exports	890	739	1,163	2,843	3,433
To China	99	14	92	262	410
To United Kingdom	303	246	314	883	959
To other countries	474	474	745	1,649	2,021
Shipments	14	5	12	49	33
Gas oil and fuel oil:					
Imports	2,873	2,301	2,449	7,476	6,876
Exports	2,276	1,508	2,260	5,370	7,795
To Japan	721	383	452	1,491	1,287
To Chile	28	....	248	171	964
To other countries	1,225	891	1,277	3,142	4,665
Shipments	302	234	283	566	879
Lubricants:					
Exports	616	599	547	1,831	1,791
To United Kingdom	177	222	130	521	316
To France	77	30	109	222	374
To other countries	353	342	302	1,066	1,084
Shipments	9	5	6	22	17
Wax (thousands of pounds):					
Imports	3,696	3,294	1,289	16,576	6,969
Exports	15,888	17,507	30,470	56,463	76,036
To United Kingdom	4,475	6,603	4,481	17,859	15,327
To Italy	2,919	1,942	10,025	7,063	17,485
To other countries	8,491	8,959	15,961	31,433	43,217
Shipments	3	3	3	9	7

*From the Bureau of Foreign and Domestic commerce. †Includes benzol—8,000 bbls. in March.

RUNS TO STILLS AND OUTPUT OF REFINERIES, MARCH, 1932

(Thousands of barrels of 42 U. S. gallons)

Input—	Crude oil: Domestic	Crude oil: Foreign	Crude oil: Total	Unfinished oils	Natural gasoline	Total input
East Coast	10,327	3,047	13,384	614	32	14,030
Appalachian	2,899	....	2,899	213	25	3,137
Indiana, Illinois, Kentucky, etc.	8,988	....	8,988	534	120	9,642
Oklahoma, Kansas, Missouri	7,380	....	7,380	389	350	8,119
Texas inland	3,901	....	3,901	110	228	4,239
Texas Gulf	11,899	50	11,949	433	213	12,595
Arkansas and Louisiana inland	1,432	....	1,432	317	72	1,821
Louisiana Gulf	3,165	139	3,304	156	131	3,591
Rocky Mountain	1,073	....	1,073	232	71	1,376
California	14,192	....	14,192	1,344	*678	16,214
Total	65,266	3,236	68,502	4,342	1,920	74,764

Output—	Gasoline	Kerosene	Gas oil and distillate fuels	Residual fuel oils	Lubricants	Wax†
East Coast	5,736	502	1,122	4,425	527	20,440
Appalachian	1,484	309	124	310	352	7,560
Indiana, Illinois, Kentucky, etc.	4,586	297	753	1,442	209	5,320
Oklahoma, Kansas, Missouri	4,155	560	725	1,591	242	3,800
Texas inland	2,148	211	197	1,192	20	280
Texas Gulf	5,215	957	1,580	2,658	408	3,920
Arkansas and Louisiana inland	701	68	152	484	14	....
Louisiana Gulf	1,526	258	289	1,091	29	6,440
Rocky Mountain	686	40	62	250	24	280
California	5,549	333	1,349	6,132	121	....
Total	31,789	3,525	6,353	19,575	1,946	47,040

Output (continued)	Coke (tons)	Asphalt (tons)	Road oil	Still gas	Miscellaneous	Unfinished products	Shortage
East Coast	16,300	72,400	15	675	24	292	158
Appalachian	3,100	13,000	3	176	20	107	143
Indiana, Illinois, Kentucky, etc.	62,000	19,500	54	699	592	493	75
Oklahoma, Kansas, Missouri	19,400	1,300	49	278	50	68	292
Texas inland	4,500	.....	6	74	10	131	226
Texas Gulf	26,100	12,500	1	670	3	623	265
Arkansas and Louisiana inland	200	1,800	..	41	10	290	50
Louisiana Gulf	5,300	20,700	..	96	..	14	124
Rocky Mountain	6,300	1,100	9	56	3	193	14
California	2,500	39,300	34	435	84	1,506	442
Total	145,700	180,600	171	3,200	796	3,716	1,789

*Includes 109,000 bbls. run through pipe lines. †Thousands of pounds.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, MARCH, 1932

	Straightrun: Total	Straightrun: %*	Straightrun: %†	Cracked: Total	Cracked: %*	Cracked: %†	Natural gasoline: Total	Natural gasoline: %†	Gasoline: Total	Gasoline: %*
East Coast	2,658	19.9	46.3	3,046	22.7	53.1	32	0.6	5,736	42.6
Appalachian	747	25.8	50.3	712	24.5	48.0	25	1.7	1,484	50.3
Indiana, Illinois, etc.	1,794	20.0	39.1	2,672	29.7	58.3	120	2.6	4,586	49.7
Oklahoma, Kansas, Missouri	2,260	30.6	54.4	1,548	21.0	37.2	350	8.4	4,158	51.6
Texas inland	1,285	32.9	59.8	635	16.3	29.6	228	10.6	2,148	49.2
Texas Gulf	2,732	22.9	52.4	2,270	19.0	43.5	213	4.1	5,215	41.9
Ark. and Louisiana inland	369	25.8	52.6	260	18.1	37.1	72	10.3	701	43.9
Louisiana Gulf	758	22.9	49.7	637	19.3	41.7	131	8.6	1,526	42.2
Rocky Mountain	302	28.1	44.0	313	29.2	45.6	71	10.4	686	57.3
California	3,583	25.2	64.6	1,288	9.1	23.2	678	12.2	5,549	34.3
Total	16,488	24.1	51.9	13,381	19.5	42.1	1,920	6.0	31,789	43.6

*Per cent of crude run. †Per cent of total gasoline output.

PRODUCTION OF MOTOR FUEL

(Thousands of barrels of 42 U. S. gallons)

	Mar., 1932 Total	Mar., 1932 Daily av.	Feb., 1932* Total	Feb., 1932* Daily av.	Jan.-Mar., 1932	Jan.-Mar., 1931
Straightrun gasoline	16,488	532	15,720	542	48,625	48,920
Cracked gasoline	13,381	432	13,598	469	40,960	39,357
Natural gasoline:						
Blended at refineries	1,811	58	1,787	62	5,877	9,195
Blended at plants†	3	...	5	...	11	40
Run through pipe lines‡	109	4	100	3	327	215
Jobbers, exports, etc.	432	14	375	13	1,208	1,025
Benzol produced§	124	4	119	4	368	550
Total motor fuel	32,349	1,044	31,704	1,093	97,386	99,252

*Revised. †East of California. ‡To refineries in California. §Estimated.

SHIPMENTS OF MOTOR FUEL BY PIPE LINES

(Thousands of barrels of 42 U. S. gallons)

	Mar.	Feb., 1932	Mar., 1931	Jan.-Mar., 1932	Jan.-Mar., 1931
Motor fuel turned into lines	2,274	1,978	431	6,375	882
Motor fuel delivered from lines	2,162	1,987	256	6,034	642
Shortage	4	7	1	18	*1
Stocks in lines and working tanks end of month	1,285	1,177	441	1,285	441

*Overage.

PRODUCTION AND DISTRIBUTION OF NATURAL GASOLINE

(Thousands of barrels of 42 U. S. gallons)

	Mar., 1932 Total	Mar., 1932 Daily av.	Feb., 1932* Total	Feb., 1932* Daily av.	Jan.-Mar., 1932	Jan.-Mar., 1931
Production	3,198	103	3,148	109	9,688	11,819
Decrease in all stocks	....	....	....	....	....	....
Total	3,198	103	3,148	109	9,688	11,819
Blended at refineries	1,811	58	1,787	62	5,877	9,195
Blended at plants east of California	3	...	5	...	11	40
Run through pipe lines in California	109	4	100	3	327	215
Jobbers, exports, etc.	433	14	375	13	1,208	1,025
Increase in all stocks	522	17	547	19	1,212	599
Balance	320	10	334	12	1,053	745
Total	3,198	103	3,148	109	9,688	11,819

*Revised.

STOCKS HELD BY REFINING COMPANIES, MARCH, 1932

(Thousands of barrels of 42 U. S. gallons)

	Gasoline: At refineries	Gasoline: At bulk terminals	Gasoline: Total	Kerosene	Gas oil and distillate fuels	Residual fuel oils
East Coast	7,237	10,329	17,566	896	1,854	4,333
Appalachian	2,036	297	2,333	170	518	595
Indiana, Illinois, Kentucky, etc.	6,065	2,128	8,193	519	1,085	2,895
Oklahoma, Kansas, Missouri	4,133	887	5,020	330	1,452	3,201
Texas inland	2,332	80	2,412	92	607	3,972
Texas Gulf	6,744	104	6,848	870	1,483	4,901
Arkansas and Louisiana inland	178	222	400	20	103	563
Louisiana Gulf	1,921	363	2,284	131	570	3,308
Rocky Mountain	2,089	...	2,089	307	270	350
California	14,485	(*)	14,485	1,204	4,141	‡92,155
Total	47,220	14,410	61,630	4,539	12,078	114,173

	Lubricants	Wax (thousands of pounds): Crude scale	Wax (thousands of pounds): Refined	Wax (thousands of pounds): Total	Coke (tons)
East Coast	3,148	27,056	26,681	53,737	11,500
Appalachian	1,115	16,490	3,362	19,852	7,300
Indiana, Illinois, Kentucky, etc.	937	22,301	1,881	24,182	164,500
Oklahoma, Kansas, Missouri	705	3,339	1,654	4,993	184,100
Texas inland	72	.....	338	338	138,400
Texas Gulf	2,078	1,412	12,903	14,315	592,500
Arkansas and Louisiana inland	34	.....	.....	.....	.....
Louisiana Gulf	94	32,872	1,044	33,916	114,600
Rocky Mountain	224	32,762	1,317	34,079	138,600
California	948	.....	.....	.....	104,600
Total	9,355	146,232	49,180	195,412	1,436,100

	Asphalt (tons)	Road oil	Miscellaneous products	Unfinished oils	Natural gasoline
East Coast	130,200	19	79	6,940	127
Appalachian	29,500	65	44	1,437	3
Indiana, Illinois, Kentucky, etc.	75,800	56	601	6,029	40
Oklahoma, Kansas, Missouri	3,800	187	38	3,183	32
Texas inland	.....	12	9	1,260	6
Texas Gulf	6,100	11	9	9,937	364
Arkansas and Louisiana inland	26,100	...	4	607	5
Louisiana Gulf	29,400	...	6	2,056	...
Rocky Mountain	3,200	138	77	1,963	4
California	47,100	136	246	29,070	2,502
Total	351,200	618	1,104	42,482	3,083

*Included with "at refineries." †Includes heavy crude. ‡Includes 4,807,000 bbls. tops.

REVISIONS FOR JANUARY AND FEBRUARY, 1932

The following data reflect mainly reclassifications of inventories by several companies. The revised information was submitted too late to be included in the January and February reports.

	Thousands of barrels: Dec., 1931 Old	Dec., 1931 Revised	Jan., 1932 Old	Jan., 1932 Revised	Feb., 1932 Old	Feb., 1932 Revised
East Coast:						
Gasoline at refineries: Stocks end of month	....	....	5,299	5,411	....	....
Natural gasoline: Stocks end of month	....	....	22	49	....	....
Residual fuel oil: Produced	....	....	4,232	4,331	4,159	4,019
Lubricants: Stocks end of month	3,099	3,073	3,026	3,099	3,299	3,269
Produced	....	....	....	....	595	632
Unfinished: Stocks end of month	7,286	7,312	7,433	7,360	7,246	7,276
Rerun	....	....	....	....	572	609
Produced	....	....	221	122	385	525
Ind'ana, Illinois, Kentucky, etc.:						
Gasoline at refineries: Stocks end of month	4,124	3,655	....	....	....	....
Produced	....	....	4,815	4,594	4,726	4,626
Gas oil: Produced	....	....	797	867	768	788
Residual fuel oil: Produced	....	....	1,039	1,833	1,265	1,305
Other finished: Stocks end of month	6,277	6,827	....	....	....	....
Unfinished: Stocks end of month	6,277	6,827	....	....	....	....
Rerun	....	....	763	717	297	457
Produced	....	....	1,003	325	95	295
Shortage	....	....	60	49	....	....
Oklahoma, Kansas, Missouri:						
Gasoline at refineries: Stocks end of month	3,452	3,406	....	....	....	....
Produced	....	....	4,238	4,182	3,820	3,860
Unfinished: Stocks end of month	3,224	3,270	....	....	....	....
Produced	....	....	370	406	212	172
Shortage	....	....	253	273	....	....
Texas inland:						
Gasoline at refineries: Stocks end of month	1,937	2,169	....	....	....	....
Rocky Mountain:						
Gasoline at refineries: Stocks end of month	1,830	1,532	2,190	1,944	2,108	2,078
Produced	....	....	820	895	....	....
Gas oil: Produced	....	....	....	....	68	38
Residual fuel oil: Produced	....	....	172	142	178	136
Other finished: Stocks end of month	49	79	52	82	51	81
Produced	....	....	4	10	2	10
Unfinished: Stocks end of month	1,553	1,821	1,598	1,814	....	....
Rerun	....	....	225	216	....	....
Produced	....	....	270	209	275	359
Total United States:						
Gasoline at refineries: Stocks end of month	38,137	37,556	41,782	41,648	46,923	46,893
Produced	....	....	33,007	32,805	31,265	31,205
Motor fuel: Stocks end of month	52,870	52,289	57,362	57,228	61,964	61,934
Produced	....	....	33,535	33,333	31,764	31,704
Domestic demand	....	....	26,845	26,196	25,508	25,344
Natural gasoline: Stocks end of month	....	....	2,125	2,152	....	....
Gas oil: Produced	....	....	6,291	6,361	5,609	5,599
Residual fuel oil: Produced	....	....	19,239	20,103	17,978	17,836
Lubricants: Stocks end of month	9,511	9,485	9,478	9,551	9,777	9,747
Produced	....	....	....	....	1,947	1,934
Domestic demand	....	....	1,512	1,413	1,050	1,190
Other finished: Stocks end of month	785	734	721	751	749	779
Produced	....	....	259	285	273	261
Unfinished: Stocks end of month	43,784	44,674	43,603	43,751	43,078	43,108
Rerun	....	....	5,243	5,295	4,336	4,633
Produced	....	....	5,087	4,285	3,506	3,890
Shortage	....	....	1,628	1,694	....	....

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

This department is conducted in order that men connected with the drilling, producing or transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depths of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

SPRAYING SYSTEM FOR BRINE

It looks as though it is going to be necessary for us to put in some system for getting rid of the salt water which we are producing in growing quantity. I read with interest your discussion of the evaporation and seepage methods. I have heard since then of a spraying system for doing the work. Can you tell me the details of this system?—S. T. H.

The following explanation of the spraying system of getting rid of oil field brine is provided by R. E. Ryle, superintendent of the Petroleum Producers Co., Wichita Falls, Tex.:

"We have found that from a standpoint of cost the spraying method can be installed much more economically than the building of and maintenance of salt water pits.

"Our first spraying system was installed on our L. F. Wilson E lease, in Archer County, Texas, in June of 1929, and it has operated successfully since that time. We have since installed three additional spraying systems. Before installation, you should select a place on the lease that is level and, if the ground will permit, the system should be arranged in the form of a rectangle, for the reason that one feeder line can be used. A good form for the spray pit is 140'x 300', with a bar pit 10 feet wide by 2 feet deep around the pit and with all earth from the bar pit piled up in a dyke on the outside of the bar pit, with a sump hole in one corner so that the water can be picked up for spraying. This sump should be at the nearest point to your spray pump if the pump is located in the power house on a lease, or at the most convenient place if you use a separate engine for your spray pump.

"The most economical hook-up the writer has found is to use the power engine for the power to drive the spray pump, by using a 24"x6" dish-pan pulley on the engine, a 1½x5' countershaft two 20-inch shaft brackets, one 12"x6" pulley and one 36"x6" pulley, one 3-inch centrifugal pump, all installed in the power house. A 3-inch suction line should extend from the sump in the spray pit and a 3-inch discharge line back to the spray pit. This discharge line can be bushed down to 2 inches at the pit, using a 2-inch feeder line through the spray pit. The spacing of the spray heads in the pit is as follows:

"With a 2-inch feeder line running through the center of the spray pit lengthwise, place a 2-inch cross 30 feet from the end of the spray pit and then a 2-inch cross every 20 feet. Then use 2"x¾" bushings to bush down for the laterals, using ¾"x10' pieces of pipe for the first section on each side of the 2-inch feeder line, placing the three-quarters-inch tees on the 10-foot lengths and putting in ¾"x20' lengths on farther out with a three-quarters-inch tee at the end of the 20-foot lengths. Leave all tees turned up, so that you can screw spray heads into them by the use of three-quarter-inch all thread nipples. After this has been completed, run the bar pit about half full of salt water, place your belts on and start up.

"By using the Thompson No. 116 spray head you can adjust the spray to meet the pump pressure to obtain the best results. Also, you can take the spray heads apart to clean out the rust, scale, grass roots and weeds that accumulate in them. The above plan calls for 40 spray heads.

"The cost of putting in the above described system less the pit and 3-inch pipe follows:

Contract price (Includes pulleys, shaft hangers, 3" pump, two 4" belts and installation of same.)	$216.52
600' ¾" pipe	36.00
10 2" crosses	7.00
40 ¾" tees	5.20
40 ¾" X all thread nipples	2.40
40 No. 116 Thompson spray heads	22.00
Total cost	$298.12

"The 3-inch line pipe and connections were not included in this cost as this item will vary according to the distance of the spray pit from the powder house."

WHY WAS IT CALLED THAT?

PITHOLE

How Pithole, the most famous boom town of the early oil fields, received its name, is told thus in J. D. Henry's "History and Romance of the Petroleum Industry":

"All Americans who were alive in 1865 remember Pithole. It was at the start and for a year afterwards the eighth wonder of the world, an excitable, erratic city, built in a day and worshiping the flood of petroleum which flowed from holes in the earth and baptised it in an oily mud. Oil was discovered early in the year, and before the summer closed there was a city on the wooded hills. It rose in a night and, like a comet, blazed forth for a brief season and then went out. Perhaps there was a touch of destiny in the name. It was just after the war, when good names were scarce, and the town was allowed to name itself. A natural pit or hole in the rocks led to its being named Pithole."

Pithole, whose peak population has been estimated at 10,000 to 30,000, grew up in four months on farm land in Venango County, Pennsylvania. It decayed just as rapidly. Nothing remains of it.

HAS RECEIVED GOOD ADVICE

Differences of opinion have arisen over matters of procedure in connection with the drilling of a wildcat well in which I am interested along with several others. A friend of one of the group is a practical driller and we submitted some questions to him. I send them herewith along with the answers he gave. As a further step in trying to make our way cautiously and intelligently I would like to have the correctness of the answers confirmed by you.

Q. In drilling wildcat oil wells, using standing equipment, is it the usual plan to drill them dry (only a little water in the hole) or wet (the hole almost full of water)?

A. All water should be shut off with casing and the well kept dry, so that when a sand is encountered you can tell if it carries oil, gas or water.

Q. If while drilling with 1,200 to 1,500 feet of water in a hole, an oil showing should be encountered that gave off a strong smell of oil, also many rainbows and black streaks of oil on the water when bailing, would this be considered a sufficient showing or evidence of oil to justify casing off the water and testing the sand?

A. Yes. Shut off the water and bail the hole dry and let it set for a few hours at least. Then bail again to see if the hole begins to fill up with oil or water.

Q. Can a fair test be given an oil sand with 1,200 to 2,000 feet of water on it.

A. No.

Q. Do oil wells ever blow in when the water pressure on the oil-bearing sand is greater than the gas or rock pressure?

A. No.

Q. Is it sometimes necessary to shoot a well to make a fair test of an oil sand? If so, why?

A. Yes. Always shoot a good showing in hard sand or sandy lime formation in a wildcat well before abandoning it, so that you may be sure you have given the well a good test. A shot might make a commercial well.

—J. D. C.

A careful reading of your list of questions and the answers to them discloses nothing reflecting on the character of the advice given. The questions are answered in a practical way and if the advice is followed the best results possible should be obtained.

The reasons for the recommendations might be better understood if it is remembered that water will exert a pressure of about .43 pound per foot of height of column. Therefore in a 1,500-foot hole the bottom-hole pressure exerted by the column of water would be about 645 pounds per square inch.

If the drill passed through a formation containing gas and oil this pressure might be sufficient to hold the oil and gas in the formation and not permit it to escape into the hole. It is therefore best to carry the least amount of water possible in drilling so that any formation penetrated by the drill can discharge its hydrocarbon constants into the hole.

If it should happen that a water stratum is penetrated and a string of casing set to shut off the water and then a little below this water stratum a second one is encountered, it may be economical to underream the hole and lower the string of casing. This will save a second string of pipe and at the same time keep the hole from being reduced twice within a short distance.

Oil or gas wells cannot blow in with a hole full of water because of the pressure exerted by the weight of the column of fluid, as stated, excepting where a high-pressure stratum is encountered where oil and gas are contained under pressures greater than that exerted by the water column. Under the last named condition a well would be obtained and it would make itself evident without any test. However, it is to eliminate the possibility of passing up a small showing that might make a commercial well that the recommendations made in the answers to your questions were given.

If your drilling contractor is experienced he will undoubtedly follow this general practice and if there is any production in the formations penetrated will know of them.

SEEK OIL-FINDING INSTRUMENT

I have been informed that there are different kinds of instruments made to locate oil and I would appreciate receiving the names of companies making such instruments.—J. W.

This is just one of several letters received by this department recently asking about instruments which supposedly will show where underground deposits of oil exist. The tenor of the letters indicates prevalence of a belief that there are oil-finding instruments and that these instruments can be handled by anybody who is fortunate enough to acquire one. This department repeatedly has sought to make it clear that while geophysics plays an immensely important part in finding underground structures favorable for the accumulation of oil, the makers of geophysical instruments and the men who use them make no claim that the instruments will do more than that. Geophysicists, geologists and the manufacturers of geophysical instruments unite almost without exception in the assertion that the drill must be depended upon to reveal the actual presence (or absence) of oil in structures outlined by geophysical methods. Prof. C. A. Heiland, in his "Geophysical Methods of Prospecting," says in this connection:

"No geophysical method locates a particular deposit. All that is obtained is physical effects which must be interpreted in terms of geology. * * * Geophysical prospecting methods will not register an effect of any formation or deposit if there are no differences between the physical properties of the formation being measured and the surrounding rock. Nevertheless will some methods, although the formation may have pronounced physical properties, register an effect if the formation is in an unfavorable position. (For instance, the torsion balance is not affected by horizontal boundaries of formations.) Finally, no geophysical method will be able to determine any subterranean disturbance with different physical properties if the disturbance is either too small or too far away from the instrument.

"While it has been proven that it is possible to locate petroleum directly by the torsion balance (due to the fact that strata filled with petroleum are lighter than strata filled with water) and by radioactive measurements (because petroleum is a good absorbent for radon), these observations were made where the deposits were virtually at the surface. These two methods are thus far of no great significance in the direct location of petroleum as compared with indirect geophysical prospecting for oil (location of structures that are favorable for the existence of oil). * * * While geophysicists are still dubious about the possibility of direct electrical prospecting for oil, the electrical method is in widespread use around the oil fields for locating the oil indirectly (that is, by determining the structural conditions) owing to the fact that different formations may have different electric conductivities if they contain solutions of a different degree of electrolytic dissociation."

Mobiloil

ON SALE NOW BY OVER 12,000 STATIONS IN MAGNOLIALAND

A NEW motor oil, vastly superior to any other ever introduced, is now on sale in the Southwest at over 12,000 service stations in Magnolialand.

The new Mobiloil comes to you at a time when a BETTER motor oil is needed to stand up in today's high-speed, high-compression motors. New Mobiloil is the motor oil you should have in your crankcase right now. It is the most economical motor protection you can buy at any price. It will protect your motor at 6, 60 or 160 miles per hour. It will save fuel and increase power. It will keep your motor clean of gum, sludge and carbon.

Join the wise majority . . . switch to new Mobiloil today!

Product of a SOCONY-VACUUM Company

Even BETTER *than Socony Dewaxed Motor Oil or the former Mobiloil!*

Join the wise majority
BUY WHERE YOU SEE **MAGNOLIA**
or Mobiloil *signs*

Natural Gas Industry Developments

NEW GAS ORDINANCE PROPOSED IN DETROIT

DETROIT, Mich., May 28.—A gas rate war in Detroit, impending for weeks, over the form and amount of reduction in the cost of gas to the consumer, developed at a council hearing on the 2-cent gas rate reduction ordinance which has been agreed on by the city administration and the Detroit City Gas Co.

Eastern natural gas interests are reported to have informally offered to bring gas to the Ohio border if the gas company would buy it and have urged immediate action in closing a contract.

A new gas ordinance providing for larger reductions than are contained in the administration ordinance and for a license fee for the use of Detroit streets, was introduced in the council by Councilman Smith.

The Smith ordinance provides that the rate for the first 50,000 feet shall be 72 cents compared to 77 cents in the administration bill and 79 cents as charged now. Approximately 72 per cent of gas sold is in this classification, according to Mr. Smith, because householders are covered in the group.

The Smith ordinance also would charge the Detroit City Gas Co., $125,000 a month rental for the use of Detroit streets and alleys—the company has no franchise but operates on a day to day agreement—but officially states that this right shall not be interpreted as a franchise. The administration ordinance does not provide for a rental fee.

W. G. Woolfolk, president of the Detroit City Gas Co., was asked by Chairman Hall if the Smith proposal would be acceptable to his company. He announced that the gas company could not accept it.

"It would not provide us with sufficient income to meet charges on our bonded indebtedness," he replied. "It would force us into involuntary insolvency."

The Smith ordinance also provides for corresponding cuts in the higher brackets of gas consumption, except for industrial users.

"I have purposely refrained from attempting to write rates for industrial users," said Mr. Smith. "Competition from the oil, coal and butane gas interests will force the gas company to keep those rates as low as possible. Industry does not need protecting."

Under the terms of the proposed ordinance, gas bills would be collected once in two months. The minimum charge for two months would be $1, with 10 cents extra for meter service.

The license provision would yield the city an annual revenue of $1,450,000. A penalty of not to exceed $500 or 90 days' imprisonment for each days' violation of the ordinance is contained.

Councilman Smith, questioning John H. Morgan, city statistician, charged that 34 per cent of the company's total income for 1931 was profit.

Mr. Morgan said that in the last 30 years the gas company has earned a total of $41,378,161.61, which amounts to an average dividend of 13 per cent on the stock outstanding. This was after all charges on bonds had been paid.

Mr. Morgan said the company had charged off depreciation at the rate of $1?0,000 to $198,000 a year from 1905 to 1930, and that $1,270,000 and $1,290,000 had been charged off in 1930 and 1931 for depreciation before calculating earnings.

"Your profits last year were $5,775,765 on total sales of $16,903,000," said Mr. Smith. "Do you, Mr. Woolfolk, know of any other business that shows that sort of profit?"

"I know I have no such figures," replied Mr. Woolfolk. "In round figures our sales were $16,000,000 and operating expenses $12,270,000, leaving a gross income to interest, dividends and surplus of $4,630,000, fixed charges were $1,916,000, leaving $2,717,000."

PRODUCTION OF CARBON BLACK DECLINES 100,000,000 POUNDS, 1931

Carbon black production during 1931 amounted to 280,907,000 pounds, which represents a decline of 26.1 per cent from the record total of 379,942,000 pounds in 1930. This was the first annual decrease recorded since 1925. The material decline in output in 1931 resulted chiefly from the curtailment of operations made necessary by stocks accumulations from preceding years.

Domestic sales of carbon black in 1931 amounted to 161,712,000 pounds, a small decrease from the 1930 total. Exports showed a gain of 14.8 per cent in 1931 and rose to a new high mark of 96,714,000 pounds. Combined domestic and foreign sales in 1931 totaled 258,426,000 pounds, or nearly 7,000,000 pounds more than in 1930.

Carbon black is utilized in the manufacture of many articles but its chief use is as a pigment and filler in tires and other rubber goods. The relative importance of this particular usage has increased in recent years; 83 per cent of the 1931 domestic sales was to companies manufacturing rubber articles. The next most important use of carbon black was as a pigment in inks and in paints. Sales of carbon black to ink companies declined from 19,220,000 pounds in 1930 to 15,184,000 pounds in 1931, reflecting principally the reduction in newsprint. The decline in sales to paint companies was even more severe than to ink companies, as only 6,760,000 pounds of black moved to paint companies in 1931, or 43.3 per cent less than in 1930. Sales of carbon black for miscellaneous uses, such as in carbon paper, typewriter ribbons, polishes, crayons and phonograph records decreased 27.9 per cent in 1931.

Since 1928, the carbon black industry has been centered in the Texas Panhandle. Although the output of plants in the Panhandle area fell off materially in 1931, the decline in most of the other producing areas was even more severe so that the relative importance of the Panhandle area was considerably enhanced. Production in Louisiana, the leading producing state from 1921 to 1928, declined 40.6 per cent in 1931. The output of the other producing States, Montana, Oklahoma, Utah and Wyoming, increased in 1931, although their combined total was still of minor importance.

Stocks of carbon black held at the plants have been accumulating in recent years; for example, the addition to stocks in 1930 was practically the same as the total domestic sales to rubber companies. In 1931, a continual weakening in prices forced some of the high cost producers to suspend operations and the others to curtail their output. There were only 26 producers in 1931, compared with 33 in 1930; 10 plants less were operated and a number of those operated were closed before the end of the year. Despite the curtailment, stocks increased approximately 20,000,000 pounds and amounted to 280,010,000 pounds as the year closed.

The total value of the carbon black produced in 1931 was $8,621,000, or about $6,000,000 less than the value in 1930. The average value per pound in 1931 was 3.07 cents, compared with 3.91 cents in 1930.

The average yield of carbon black in 1930 was 1.44 pounds per 1,000 cubic feet of gas. This represents the highest annual yield attained, although it is only .01 pound above the average for 1930.

Practically all the countries which buy carbon black from the United States increased their purchases in 1931. The United Kingdom continued to be the leading carbon black customer, followed by France and Germany. Exports to Canada declined in 1931 but that country continued to rank fourth, ahead of Japan.

The primary statistics of the carbon black industry in 1930 and 1931 were as follows:

	1930	1931
Number of producers reporting	33	26
Number of plants	66	58
Quantity produced (pounds):		
Louisiana	96,729,000	57,485,000
Texas:		
Panhandle district	254,844,000	197,546,000
Breckenridge district	16,905,000	13,332,000
Other states	11,464,000	12,544,000
Total	379,942,000	280,907,000
Produced by:		
Channel process (pounds)	350,254,000	255,322,000
Other processes* (pounds)	29,688,000	25,585,000
Stocks held by producers December 31 (pounds)	259,245,000	280,010,000
Losses (pounds)	1,361,000	1,716,000
Domestic:		
To rubber companies	128,572,000	134,315,000
To ink companies	19,220,000	15,184,000
To paint companies	11,922,000	6,760,000
To miscellaneous companies	7,565,000	5,453,000
Total	167,279,000	161,712,000
Export	84,260,000	96,714,000
Value (at plants) of carbon black produced:		
Total (dollars)	14,852,000	8,621,000
Average per pound (cents)	3.91	3.07
Estimated quantity of natural gas used (M cubic feet)	266,471,000	195,396,000
Average yield per M cubic feet (pounds)	1.43	1.44

*Including disc, roller, "special" and thermatomic.

MIDLAND-TWIN STATES

NEW YORK, May 30.—Chancellor J. O. Wolcott, at Wilmington, Del., has approved reorganization plans for the Midland Natural Gas Co. and the Twin States Natural Gas Co., submitted by receivers of both companies. Midland is a subsidiary of Twin States Natural Gas.

E. M. Watters and Charles H. Johnson are receivers and A. J. Johnson and Ross B. Thomas are ancillary receivers appointed by the West Virginia courts for the Midland company.

Midland controls approximately 38,000 acres of gas land in Pennsylvania and West Virginia, with 350 wells flowing about 13,000,000 feet per day, and with reserves estimated at 200,000,000,000 feet.

Twin States holds approximately 58,000 acres in Pennsylvania, Kentucky and West Virginia, with 465 wells producing about 88,000,000 feet daily, and with reserves estimated at 340,000,000,000 feet.

TEXAS RATE HEARING SCHEDULED ON JULY 11

AUSTIN, Tex., May 28.—A hearing to determine whether city gas rates in the Texas system of the Lone Star Gas Co. are fair and equitable was set for July 11 by the State Railroad Commission.

The hearing will require from four to seven weeks, Chairman C. V. Terrell said. Six volumes of figures, representing the valuation of the Lone Star company recently completed by auditors and engineers, will be the basis for the city gas rate determinations.

Valuation of the United Gas Co.'s properties, similar to that recently completed on the Lone Star system, will be made for the same purpose, Laten Stanberry, head of the gas utilities divvision of the Railroad Commission, announced.

Representatives of various Texas cities from which gas rate disputes have been appealed to the commission probably will be asked to appear at the Lone Star hearing and aid in developing the case.

After determining city gas rates, the commissioners will be in a position to judge whether domestic and industrial gas rates charged in various cities supplied by the Lone Star system are fair, it was pointed out.

Gas rate disputes from Fort Worth, Royse City, Cisco, Eastland, Wichita Falls, Denton, Hillsboro, Corsicana and Teague are now pending before the commission.

Replacement value of the Lone Star system was computed at $47,000,000 in the report filed with the commission. This figure, however, did not include Lone Star properties located in Oklahoma.

The replacement value carried on the books of the company is $72,000,000. The principal point of difference between the commission's valuation and the company's figures is expected to be the rate and amount of depreciation.

The United Gas valuation will be made by the utilities division staff, instead of by private auditing and valuating companies. The company has about 2,000 miles of lines in Texas, serving principally East Texas cities to the Trinity River, and the territory south and southwest of a geographical line from Austin to Houston.

United gas lines run from Laredo to Monroe, La., from Monroe to Dallas and Fort Worth, between San Antonio and Austin, and from Wichita Falls to Wheeler County.

When the valuation is completed, a hearing similar to that set for July 11 will be called, Stanberry explained.

CARBON BLACK TAX UPHELD IN LOUISIANA

SHREVEPORT, La., May 28.—Louisiana's "carbon black tax" is levied not upon the product as property but upon the occupation of manufacturing carbon black and the 1928 legislative act imposing the excise tax is not discriminatory, the Federal Circuit Court of Appeals ruled in New Orleans in dismissing at the plaintiff's cost the suit of Century Carbon Co. against tax collectors of Ouachita and Richland Parishes.

The court further decreed that an interlocutory injunction previously issued be recalled and set aside with "full reservation of the right of defendants to proceed" in the collection of taxes owed by the plaintiff.

Federal jurists who joined in the decision included Judges Rufus E. Foster, Ben C. Dawkins and Wayne G. Borah.

Century Carbon Co. had sought not only temporary but final injunction against the collection of the carbon black tax on grounds that it is unconstitutional and discriminatory.

Personal Paragraphs About Oil Men

Mack Strode, recently at Dodge City, Kans., is now at Winfield, Kans.

* * *

H. J. Lockhart of the Parkersburg Rig & Reel Company was in Tulsa this week.

* * *

W. E. Ramsey, of the Ramsey Petroleum Corporation, has returned to Los Angeles, Calif., from the Mid-Continent.

* * *

A. A. Hammer, of Abilene, Tex., consulting geologist, is back in Abilene after making a 10-day survey of Southwest Texas.

* * *

Charles T. Jones, formerly of the geological staff of Mid-Kansas Oil & Gas Company in Tulsa, is now located at McAlester, Okla.

* * *

Martin Rathvon, manager of the Argo Oil Company with headquarters at Casper, Wyo., has been on a business trip to Tulsa, Okla.

* * *

Buck Haworth and Heinie Henderson, after returning to the Southwest Texas territory, are again making that their center of operations.

* * *

John M. Foltz, drilling contractor and operator of Muskogee, Okla., is recovering from injuries received while drilling a well near Muskogee.

* * *

J. H. McMurray and W. C. McBride, of Los Angeles, Calif., operators in the Kevin-Sunburst territory, have been making a survey of Southwest Texas.

* * *

Mr. and Mrs. George H. Jaques of Denver have been visiting Casper, Wyo., friends. Mr. Jaques is vice president and general manager of the Midwest Refining Company.

* * *

Mr. and Mrs. W. W. Moore of Denver were in Casper, Wyo., several days recently. Mr. Moore is petroleum engineer for the Rocky Mountain division of The Texas Company.

* * *

R. E. Cotulla, formerly geologist with the Texas Pacific Coal & Oil Company at San Antonio, Tex., but more recently at Wichita Falls, Tex., has moved back to San Antonio.

* * *

G. W. Sweet, mill superintendent of the South Chester Tube Company, and Joe Erner, inspector for the company, both of Chester, Pa., are in East Texas looking over the field.

* * *

H. J. Duncan, supervisor of the mineral leasing division, U. S. Geological Survey, Casper, Wyo., and J. R. Reeve, deputy supervisor, are on an inspection trip of federal leases in Montana.

* * *

Frank Blehr, chief accountant in the mineral leasing division, U. S. Geological Survey, with Casper, Wyo., headquarters, has been called to Washington by the Department of the Interior.

* * *

Miss Beatrice Bell, after spending three years with the International Petroleum Company at Talara, Peru, has returned to Sarnia where she will be connected with the office staff of Imperial Oil, Ltd.

* * *

Pat Neff, member of the Railroad Commission of Texas, has resigned from that body, effective June 4, and Ernest O. Thompson, mayor of Amarillo, is to succeed him and serve until January 1, 1933, filling the unexpired term of Mr. Neff.

* * *

Homer Wilson, who has been employed by major companies in a number of foreign fields and more recently in California, Texas, and Oklahoma, has been visiting W. H. Strang, deputy supervisor of the mineral leasing division of the U. S. Geological Survey, at Casper, Wyo., whom he had not seen for 23 years.

Melville M. Garrett, of Wichita Falls, Tex., consulting geologist, is arranging to move to San Antonio, Tex.

* * *

E. B. Redpath, secretary of the Ohio Oil Company, has been elected a member of the board of directors of the company.

* * *

Captain J. F. Lucey, president of Lucey Petroleum Corporation, has been made chairman of the Oil Committee of the East Texas Chamber of Commerce.

* * *

E. G. Robinson, of the Shell Petroleum Corporation, at St. Louis, Mo., who accompanied Texas geologists on the field excursion to the Solitario in West Texas, continued to California from El Paso before returning to St. Louis.

Men of the Industry

Silas C. Stathers

Silas C. Stathers, a native of Tyler County, West Virginia, was retired May 1 as chief geologist of the Standard Oil Company of Louisiana, after having been 21 years with subsidiary companies of the Standard of New Jersey. Of this time, 15 years was spent with the Louisiana company in the Shreveport district.

In 1897 Mr. Stathers entered the employ of the South Penn Oil Company in Mannington, W. Va., after graduating from the School of Civil Engineering of the West Virginia University in 1895. In succeeding years, he was employed by the J. H. Weaver Coal Company of Philadelphia and the United States Steel Company. In 1914 he became chief geologist for the Romano-Americano Petroleum Company in Rumania, and remained in this position until February, 1917, when he was made chief geologist for the Standard Oil Company of Louisiana with offices in Shreveport.

Mr. Stathers is a member of the American Association of Petroleum Geologists, the American Institute of Mining and Metallurgical Engineers, and is a charter member of the Shreveport division of the Southwestern Geological Society. He is also a charter member of the Shreveport Geological Society and served as its president. Mr. Stathers was an advocate of the society's annual field trip and a member of the committee which outlined the first trip of this society. It was also on his recommendation that the company by which he was employed was the first in this district to add a paleontologist to its geological department.

Paul S. Ache has returned from a business trip to Chicago.

* * *

W. C. Kinkel has moved to San Angelo, Tex., from Midland, Tex.

* * *

J. M. Flynn has moved from Wichita Falls, Tex., to Breckenridge, Tex.

* * *

D. B. Crawford of the Parkersburg Rig & Reel Company has been making a tour of Southwest Texas.

* * *

Edgar Jackson, of the Pan American Petroleum Corporation, has returned from Aruba, Dutch West Indies, to East Chicago, Ind.

* * *

E. H. Crawley, superintendent of the Simrall refinery at Horse Cave, Ky., has been making an inspection trip through the Mid-Continent district.

* * *

Pouder & Pomeroy, of Tulsa, have opened an office in the Frost National Bank Building, in San Antonio, Tex., with William H. Pomeroy in charge.

* * *

Peri Richards of Marietta, Ohio, drilling contractor, who was active in the Nowata, Okla., area between 1903 and 1912, was a visitor at Nowata recently.

* * *

Herbert A. Hemphill, geologist with University Lands, San Angelo, Tex., Mrs. Hemphill and son and daughter are motoring to Columbia, S. C., to visit Mr. Hemphill's former home.

* * *

Sir Edward Manville, J.P., chairman of the board of Pheonix Oil & Transport Company, Ltd., with headquarters in London, England, is inspecting the company's properties in Rumania.

* * *

Norval White, Pacific Coast representative of the American Petroleum Institute, was recently elected an honorary dean of statistics at a recent informal meeting of a number of California statisticians.

* * *

J. P. Roney, marine manager of The Texas Company, arrived in Los Angeles, Calif., from New York last week and will complete a survey of Texaco terminals at San Francisco, Portland and Seattle before returning East.

* * *

O. Milne and G. A. Trube have joined the board of Peabody, Ltd., of London, England, British associates of the Peabody Engineering Corporation, New York. J. W. M. Topley has retired as executive director of the British company.

* * *

R. E. Wertz, manager of the Amarillo Gas Company of Amarillo, Tex., has been appointed a director of the Amarillo board of city development. He was formerly vice president and general superintendent of the Producers & Refiners Corporation.

* * *

J. R. Turnbull, formerly head of the land department of the Gulf Production Company at Houston, Tex., has recently been in the San Antonio territory. He has been making his headquarters for the past several years at Roswell, N. Mex., and is very much improved in health.

* * *

The marriage of Miss Viola Lillian Gregory, daughter of Mr. and Mrs. Henry Gregory, to John Thomas Braybrook of El Centro, Colombia, took place in Enniskillen Township, Ontario. Mr. Braybrook, who is a well-known Canadian driller, has been for some time with the International Petroleum Company in the Colombian Field.

* * *

R. A. Broomfield, Los Angeles, Calif., president of the Barnsdall Oil Company; W. K. Whiteford and D. R. Snow, both vice presidents, from Tulsa, made an inspection of the company's properties in West Texas during the week, conducted by James S. Noland, land department, and A. L. Loskamp, geologist, both of Midland, Tex.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

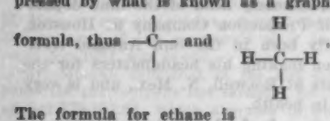
Questions involving patented processes, intricate formulas, and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

CLASSIFICATION OF HYDROCARBONS

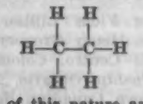
Please explain just what is meant by the following terms: Pure hydrocarbons, saturated hydrocarbons, unsaturated hydrocarbons, and aromatic hydrocarbons. —K. H. S.

Carbon is remarkable in that it combines with hydrogen to form an extraordinarily large number of compounds and when these contain carbon and hydrogen only they are known as pure hydrocarbons. The hydrocarbons are classified and grouped according to their chemical characteristics; the simplest one being methane, indicated by the chemical formula CH_4. When another carbon and two hydrogens are added to this the next compound in the series, ethane C_2H_6, is formed, and by proceeding in this way a whole series of compounds may be produced. These are known as paraffin hydrocarbons, from the Latin parum affinis, meaning little affinity, because they are not easily acted upon by chemical reagents.

Each carbon has four points of union permitting it to unite with four units of such an element as hydrogen, which has only one point of union. This fact is expressed by what is known as a graphic formula, thus



The formula for ethane is



Compounds of this nature are known as saturated, because all points of union of carbon are satisfied by bonding with another element, hydrogen.

When two or more carbon atoms are present there may be a condition where all of the points of union of the carbon atoms are not bonded with another element, and when this is true the compound is said to be unsaturated. A good example of an unsaturated hydrocarbon is acetylene, the gas used in special torches for cutting and welding metals. The chemical composition of acetylene is shown by the formula C_2H_2, the graphic formula being H—C≡C—H. The unsaturated hydrocarbons are more active chemically than the saturated hydrocarbons in that they respond to treatment with chemicals and many elements may be caused to unite with them to form a saturated compound.

While methane is the primary or foundation compound of a whole series of hydrocarbons, many of which are of the paraffin group, most of them are of the open chain type, ethane being the next to methane, then propane containing another CH_2, and so on to a very high number; the other group starts with benzol, C_6H_6, in which the carbon atoms are arranged in a ring. These are called aromatic hydrocarbons because many of those first to be discovered had a pleasant fragrant aroma, such as oil of wintergreen and bitter almond.

The saturated paraffin hydrocarbons are found in natural gas and petroleum, and the aromatic hydrocarbons are derived from coal, or more precisely, from the tar that is produced when making coke.

SPECIFICATIONS FOR U. S. MOTOR GASOLINE

What are the official specifications for U. S. Motor gasoline? I am told that the initial and some of the per cents off have been changed.—H. S. G.

The federal specification for U. S. Government Motor gasoline effective July 21, 1931, follows:

U. S. Government Motor gasoline shall be volatile hydrocarbon fuel free from water and suspended matter, and shall be suitable for use as fuel in internal combustion engines.

Corrosion test.—A clean copper strip shall not show more than extremely slight discoloration when submerged in the gasoline for three hours at 122° F.

Distillation range.—When the thermometer reads 75° C. (167° F.) not less than 10 per cent shall be evaporated.

When the thermometer reads 140° C. (284° F.) not less than 50 per cent shall be evaporated.

When the thermometer reads 200° C. (392° F.) not less than 90 per cent shall be evaporated.

The residue shall not exceed 2 per cent.

Per cent evaporated shall be found by adding the distillation loss to the amount collected in the receiver at each specification temperature.

The Government reserves the right to reject material during the months of December, January, February and March in those localities where the normal mean temperature during the month of January is less than 27° F. if when the thermometer reads 65° C. (149° F.) less than 10 per cent shall be evaporated.

Sulphur.—Sulphur shall not exceed 0.10 per cent.

Vapor pressure.—The Reid vapor pressure at 37.8° C. (100° F.) shall not exceed 12 pounds per square inch.

When Reid vapor pressure measurements are made on samples taken at the refinery or from tank cars, barges, or bulk storage an additional 1 pound per square inch in vapor pressure shall be allowed.

"The Government reserves the right to reject material (a) in those localities where the normal mean minimum temperature during the month of January is greater than 27° F. if the vapor pressure at 37.8° C. (100° F.) exceeds 10 pounds per square inch; (b) during the months of June, July, August and September if the vapor pressure at 37.8° C. (100° F.) exceeds 8 pounds per square inch."

MOTOR FUEL V OR EMERGENCY GASOLINE

Will you kindly furnish the specifications for the grade of gasoline known as Motor Fuel V, which is recommended for fire engines and other emergency uses?—L. M. S.

The Federal Specifications Board has adopted specifications for a special grade of gasoline which may be used by the Government at the discretion of the head of the department or bureau concerned and its agencies for ambulances, fire engines, emergency vehicles, military and naval equipment, and for other equipment under special conditions.

1. This fuel shall be free from water and suspended matter.

Properties and Tests

2. Sampling.—Samples shall be taken according to procedures described in Part 3 of U. S. Government Master Specification No. 2d, or latest revision thereof.

3. Corrosion test, Method 530.22.—A clean copper strip shall not show more than extremely slight discoloration when submerged in the fuel for three hours at 122° F.

4. Distillation range, Method 100.13. When 10 per cent has been recovered in the receiver, the thermometer shall not read more than 65° C. (149° F.), no less than 50° C. (122° F.); provided that, for each per cent distillation loss less than 4 per cent, obtained in the A.S.T.M. distillation, the minimum 10 per cent temperature requirement shall be lowered 3° C. (5.4° F.).

When 50 per cent has been recovered in the receiver, the thermometer shall not read more than 125° C. (257° F.).

When 90 per cent has been recovered in the receiver, the thermometer shall not read more than 180° C. (356° F.).

The endpoint shall not be higher than 205° C. (401° F.).

At least 95 per cent shall be recovered as distillate in the receiver from the distillation.

5. Sulphur, Method 520.11.—Sulphur shall not exceed 0.10 per cent.

6. All tests shall be made according to the methods of testing contained in Part 2 of U. S. Government Master Specification No. 2d for lubricants and liquid fuels (Bureau of Mines Technical Paper 323B), or latest revision thereof.

MANUFACTURE OF NITROGLYCERIN

If convenient I would appreciate a short description of the method used in making nitroglycerin. I have a general idea, probably that of the average oil country man, but have never read or heard the method and temperatures used in mixing and washing.—T. G.

Nitroglycerin, as indicated by the name, is made by nitrating glycerin. It may be produced by the direct action of nitric acid and glycerin, the reaction being controlled by ice water. The oily product is washed with water, separated and neutralized with a chloroform solution of sodium carbonate. The essential reaction is explained by the equation:

$$\underset{\text{glycerin}}{C_3H_5(OH)_3} + 3\,\underset{\text{nitric acid}}{HNO_3} \rightarrow \underset{\text{nitroglycerin}}{C_3H_5(NO_3)_3} + 3\,\underset{\text{water}}{H_2O}$$

Direct treatment with nitric acid is too expensive, because of the difficulty in recovering the excess nitric acid. The usual method is to add glycerin to a mixture of nitric acid (40 per cent) and sulphuric acid (60 per cent), under definite temperature conditions. The nitrating temperature, water cooled, may range between 77° and 86° F., but since low temperatures give the larger yields the commercial practice is to utilize artificial refrigeration, a cold brine being circulated through the cooling jacket of the nitrator and the nitrating temperature not permitted to go above 59° F.

The mixing is usually done with compressed air, the agitation being continued for a few minutes after all of the glycerin has been added. The oil separates after standing about 30 minutes. The nitroglycerin is run off to be washed with water and neutralized with a weak solution of sodium carbonate. The temperature during the washing and neutralization is maintained between 86° and 100° F. The neutralizing wash is followed by a final wash with water. After proper settling the product is considered to be ready for use.

STATIC ELECTRICITY IN PETROLEUM PRODUCTS

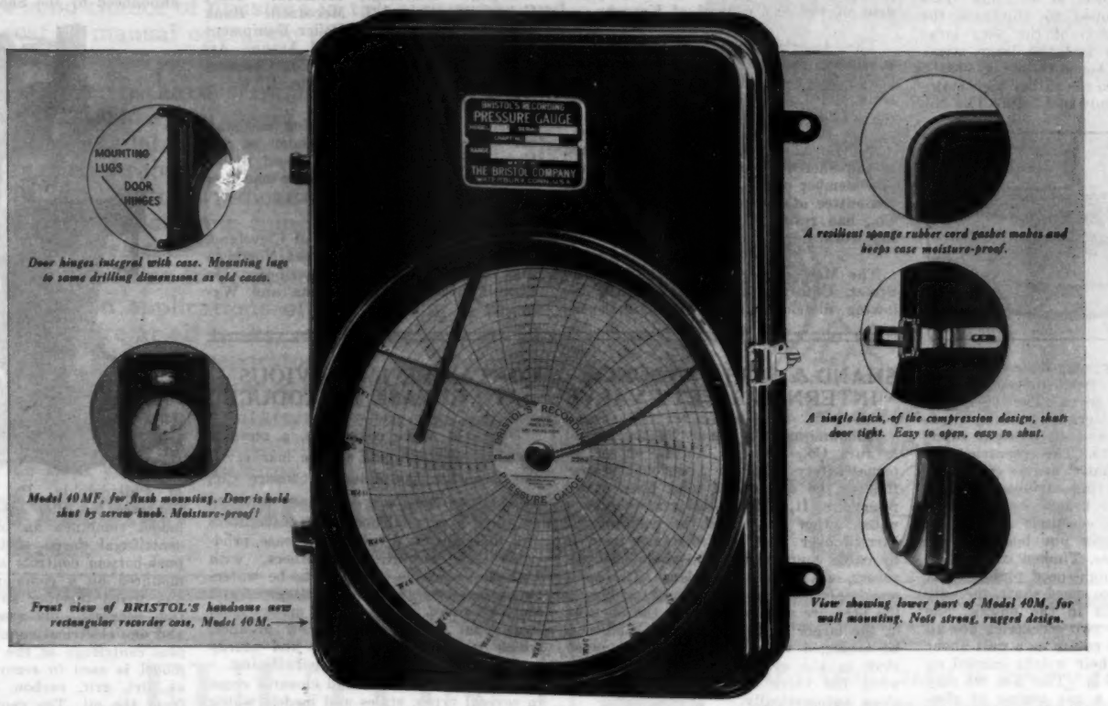
Could you give me a simple explanation of how electricity is formed or developed in tanks and trucks handling gasoline or other petroleum products?—P. H. A.

The word electricity is from the Greek word meaning amber and the first form of electricity to be discovered was that produced by rubbing a piece of amber. The changed condition of the amber after the friction with a woolen cloth was shown by the fact that it would attract small pieces of straw and dry leaves. Sealing wax and hard rubber may be similarly electrified. The stem portion of a fountain pen after being rubbed several times on the sleeve of a woolen coat will contain enough electricity to attract small pieces of paper and hair. Such substances as have been mentioned are fair insulators so the electricity formed is stored on the surface and does not escape through the body. Some metals will produce electricity under friction and store it in the same way if insulation is provided; for example, a piece of polished brass rod held in a handle of insulating material may become charged by friction and will retain the charge for some time unless it is discharged in the same way that is done with the piece of hard rubber, amber and sealing wax. Numerous mineral substances will behave in this manner, and even the human body will under certain conditions become an accumulator and store up enough electricity to give off a spark when a metal in contact with the earth or another person is touched. This form of electricity is called static electricity.

Liquids moving through pipes in large volumes and with considerable speed, or when agitated and moved around in a tank, have been known to produce static electricity which may be retained in the liquid for some time. This is what sometimes happens to gasoline. The movement of silk and wool through a body of dry gasoline may collect a sufficient charge of electricity to produce a spark at the surface, and where there is a gap between the rim of the vessel, with the result that the gasoline becomes ignited and a fire results. This fact is recognized in dry cleaning plants, where precautions are always observed to prevent this possible damage.

There is not much danger of this sort to be expected from the heavier and nonvolatile petroleum products because there is no combustible vapor on the surface of the liquid. Usually storage tanks if insulated from the earth are especially bonded with the ground so that any static electricity entering the tank will be discharged. A similar device is used on gasoline trucks that become insulated because of the rubber tires and use is made of a trailing chain to make the bond with the ground. Station pumps are now fitted with long metallic nozzles so that there will be close contact with the tank of the car while the gasoline is flowing into the tank and no gap condition possible.

BRISTOL'S *sensitive actuating elements* standard in this New Case


MOUNTING LUGS
DOOR HINGES
Door hinges integral with case. Mounting lugs to same drilling dimensions as old cases.
Model 40MF, for flush mounting. Door is held shut by screw knob. Moisture-proof!
Front view of BRISTOL'S handsome new rectangular recorder case, Model 40M.
PRESSURE GAUGE
THE BRISTOL COMPANY
A resilient sponge rubber cord gasket makes and keeps case moisture-proof.
A single latch, of the compression design, shuts door tight. Easy to open, easy to shut.
View showing lower part of Model 40M, for wall mounting. Note strong, rugged design.

EXEMPLIFYING craftsmanship to a degree that proclaims a marked advance in instrument construction, BRISTOL'S new Model 40M Case possesses both handsome appearance and genuine commercial utility.

Of the popular rectangular form first introduced by BRISTOL in 1908, Model 40M is splendidly proportioned. It is so designed that it can accommodate BRISTOL'S most sensitive actuating elements which for years have been accepted by industry as the standard of accuracy.

This distinctive new model is pressure-cast of corrosion-resisting aluminum alloy. It has an inherently smooth surface that assures an attractive finish either in black, white or aluminum as specified.

Light in weight, strong, rigid, Model 40M is of a self-reinforcing type. A permanently resilient sponge rubber cord door gasket makes and keeps the case dust-proof, moisture-proof and fume-proof. Only a single toggle clamp, of a unique "compression" design, is needed to shut the door absolutely tight. This clamp is both quick opening and quick closing.

Substantial door hinges integral with case, sprung metal ring for holding glass window, inverted pen arm, single or multiple records, surface or flush mounting, front, top or back connections are other features that reflect the excellence of BRISTOL'S design and workmanship.

A request brings complete information.

These BRISTOL'S Recorders will be equipped with the new case: Pressure, Vacuum, and Liquid Level Gauges; Liquid, Vapor and Gas-Filled Thermometers; Voltmeters, Ammeters, Frequency Meters; Electrical and Mechanical Operation Recorders; Psychrometers; Free Vane Air Operated Controllers; Long Distance Transmitting and Receiving Systems.

THE BRISTOL COMPANY ~ WATERBURY ~ CONNECTICUT

Branch Offices: Akron, Birmingham, Boston, Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco

TRADE MARK.

BRISTOL'S

REG. U.S. PAT. OFF.

INSTRUMENTS FOR INDICATING RECORDING CONTROLLING SINCE 1889

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas, and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

CLASSIFICATION OF HYDROCARBONS

Please explain just what is meant by the following terms: Pure hydrocarbons, saturated hydrocarbons, unsaturated hydrocarbons, and aromatic hydrocarbons. —K. H. S.

Carbon is remarkable in that it combines with hydrogen to form an extraordinarily large number of compounds and when these contain carbon and hydrogen only they are known as pure hydrocarbons. The hydrocarbons are classified and grouped according to their chemical characteristics; the simplest one being methane, indicated by the chemical formula CH_4. When another carbon and two hydrogens are added to this the next compound in the series, ethane C_2H_6, is formed, and by proceeding in this way a whole series of compounds may be produced. These are known as paraffin hydrocarbons, from the Latin parum affinis, meaning little affinity, because they are not easily acted upon by chemical reagents.

Each carbon has four points of union permitting it to unite with four units of such an element as hydrogen, which has only one point of union. This fact is expressed by what is known as a graphic formula, thus —C— and H—C—H.

The formula for ethane is

H H
| |
H—C—C—H
| |
H H

Compounds of this nature are known as saturated, because all points of union of carbon are satisfied by bonding with another element, hydrogen.

When two or more carbon atoms are present there may be a condition where all of the points of union of the carbon atoms are not bonded with another element, and when this is true the compound is said to be unsaturated. A good example of an unsaturated hydrocarbon is acetylene, the gas used in special torches for cutting and welding metals. The chemical composition of acetylene is shown by the formula C_2H_2, the graphic formula being H—C≡C—H. The unsaturated hydrocarbons are more active chemically than the saturated hydrocarbons in that they respond to treatment with chemicals and many elements may be caused to unite with them to form a saturated compound.

While methane is the primary or foundation compound of a whole series of hydrocarbons, many of which are of the paraffin group, most of them are of the open chain type, ethane being the next to methane, then propane containing another CH_2, and so on to a very high number; the other group starts with benzol, C_6H_6, in which the carbon atoms are arranged in a ring. These are called aromatic hydrocarbons because many of those first to be discovered had a pleasant fragrant aroma, such as oil of wintergreen and bitter almond.

The saturated paraffin hydrocarbons are found in natural gas and petroleum, and the aromatic hydrocarbons are derived from coal, or more precisely, from the tar that is produced when making coke.

SPECIFICATIONS FOR U. S. MOTOR GASOLINE

What are the official specifications for U. S. Motor gasoline? I am told that the initial and some of the per cents off have been changed.—H. S. G.

The federal specification for U. S. Government Motor gasoline effective July 21, 1931, follows:

U. S. Government Motor gasoline shall be volatile hydrocarbon fuel free from water and suspended matter, and shall be suitable for use as fuel in internal combustion engines.

Corrosion test.—A clean copper strip shall not show more than extremely slight discoloration when submerged in the gasoline for three hours at 122° F.

Distillation range.—When the thermometer reads 75° C. (167° F.) not less than 10 per cent shall be evaporated.

When the thermometer reads 140° C. (284° F.) not less than 50 per cent shall be evaporated.

When the thermometer reads 200° C. (392° F.) not less than 90 per cent shall be evaporated.

The residue shall not exceed 2 per cent.

Per cent evaporated shall be found by adding the distillation loss to the amount collected in the receiver at each specification temperature.

The Government reserves the right to reject material during the months of December, January, February and March in those localities where the normal mean temperature during the month of January is less than 27° F. if when the thermometer reads 65° C. (149° F.) less than 10 per cent shall be evaporated.

Sulphur.—Sulphur shall not exceed 0.10 per cent.

Vapor pressure.—The Reid vapor pressure at 37.8° C. (100° F.) shall not exceed 12 pounds per square inch.

When Reid vapor pressure measurements are made on samples taken at the refinery or from tank cars, barges, or bulk storage an additional 1 pound per square inch in vapor pressure shall be allowed.

"The Government reserves the right to reject material (a) in those localities where the normal mean minimum temperature during the month of January is greater than 27° F. if the vapor pressure at 37.8° C. (100° F.) exceeds 10 pounds per square inch; (b) during the months of June, July, August and September if the vapor pressure at 37.8° C. (100° F.) exceeds 8 pounds per square inch."

MOTOR FUEL V OR EMERGENCY GASOLINE

Will you kindly furnish the specifications for the grade of gasoline known as Motor Fuel V, which is recommended for fire engines and other emergency uses?—L. M. S.

The Federal Specifications Board has adopted specifications for a special grade of gasoline which may be used by the Government at the discretion of the head of the department or bureau concerned and its agencies for ambulances, fire engines, emergency vehicles, military and naval equipment, and for other equipment under special conditions.

1. This fuel shall be free from water and suspended matter.

Properties and Tests

2. Sampling.—Samples shall be taken according to procedures described in Part 3 of U. S. Government Master Specification No. 2d, or latest revision thereof.

3. Corrosion test, Method 530.22.—A clean copper strip shall not show more than extremely slight discoloration when submerged in the fuel for three hours at 122° F.

4. Distillation range, Method 100.13. When 10 per cent has been recovered in the receiver, the thermometer shall not read more than 65° C. (149° F.), no less than 50° C. (122° F.); provided that, for each per cent distillation loss less than 4 per cent, obtained in the A.S.T.M. distillation, the minimum 10 per cent temperature requirement shall be lowered 3° C. (5.4° F.).

When 50 per cent has been recovered in the receiver, the thermometer shall not read more than 125° C. (257° F.).

When 90 per cent has been recovered in the receiver, the thermometer shall not read more than 180° C. (356° F.).

The endpoint shall not be higher than 205° C. (401° F.).

At least 95 per cent shall be recovered as distillate in the receiver from the distillation.

5. Sulphur, Method 520.11.—Sulphur shall not exceed 0.10 per cent.

6. All tests shall be made according to the methods of testing contained in Part 2 of U. S. Government Master Specification No. 2d for lubricants and liquid fuels (Bureau of Mines Technical Paper 323B), or latest revision thereof.

MANUFACTURE OF NITROGLYCERIN

If convenient I would appreciate a short description of the method used in making nitroglycerin. I have a general idea, probably that of the average oil country man, but have never read or heard the method and temperatures used in mixing and washing.—T. G.

Nitroglycerin, as indicated by the name, is made by nitrating glycerin. It may be produced by the direct action of nitric acid and glycerin, the reaction being controlled by ice water. The oily product is washed with water, separated and neutralized with a chloroform solution of sodium carbonate. The essential reaction is explained by the equation:

$$\underset{\text{glycerin}}{C_3H_5(OH)_3} + 3\,\underset{\text{nitric acid}}{HNO_3} \rightarrow \underset{\text{nitroglycerin}}{C_3H_5(NO_3)_3} + 3\,\underset{\text{water}}{H_2O}$$

Direct treatment with nitric acid is too expensive, because of the difficulty in recovering the excess nitric acid. The usual method is to add glycerin to a mixture of nitric acid (40 per cent) and sulphuric acid (60 per cent), under definite temperature conditions. The nitrating temperature, water cooled, may range between 77° and 86° F., but since low temperatures give the larger yields the commercial practice is to utilize artificial refrigeration, a cold brine being circulated through the cooling jacket of the nitrator and the nitrating temperature not permitted to go above 59° F.

The mixing is usually done with compressed air, the agitation being continued for a few minutes after all of the glycerin has been added. The oil separates after standing about 30 minutes. The nitroglycerin is run off to be washed with water and neutralized with a weak solution of sodium carbonate. The temperature during the washing and neutralization is maintained between 86° and 100° F. The neutralizing wash is followed by a final wash with water. After proper settling the product is considered to be ready for use.

STATIC ELECTRICITY IN PETROLEUM PRODUCTS

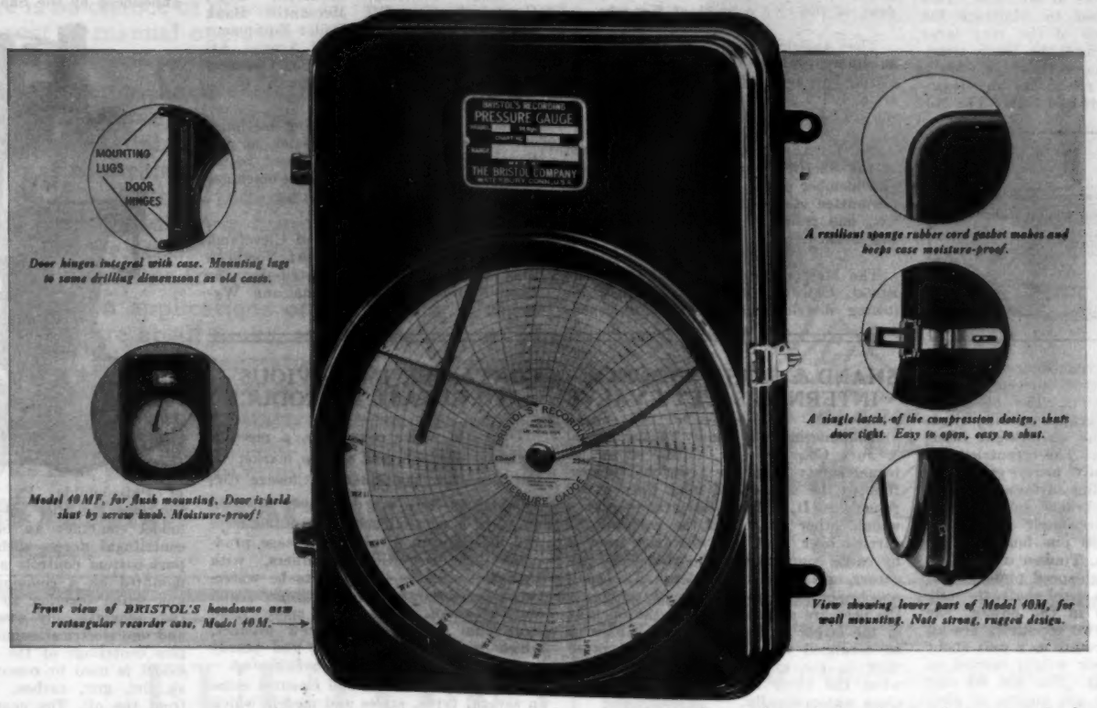
Could you give me a simple explanation of how electricity is formed or developed in tanks and trucks handling gasoline or other petroleum products?—P. H. A.

The word electricity is from the Greek word meaning amber and the first form of electricity to be discovered was that produced by rubbing a piece of amber. The changed condition of the amber after the friction with a woolen cloth was shown by the fact that it would attract small pieces of straw and dry leaves. Sealing wax and hard rubber may be similarly electrified. The stem portion of a fountain pen after being rubbed several times on the sleeve of a woolen coat will contain enough electricity to attract small pieces of paper and hair. Such substances as have been mentioned are fair insulators so the electricity formed is stored on the surface and does not escape through the body. Some metals will produce electricity under friction and store it in the same way if insulation is provided; for example, a piece of polished brass rod held in a handle of insulating material may become charged by friction and will retain the charge for some time unless it is discharged in the same way that is done with the piece of hard rubber, amber and sealing wax. Numerous mineral substances will behave in this manner, and even the human body will under certain conditions become an accumulator and store up enough electricity to give off a spark when a metal in contact with the earth or another person is touched. This form of electricity is called static electricity.

Liquids moving through pipes in large volumes and with considerable speed, or when agitated and moved around in a tank, have been known to produce static electricity which may be retained in the liquid for some time. This is what sometimes happens to gasoline. The movement of silk and wool through a body of dry gasoline may collect a sufficient charge of electricity to produce a spark at the surface, and where there is a gap between the rim of the vessel, with the result that the gasoline becomes ignited and a fire results. This fact is recognized in dry cleaning plants, where precautions are always observed to prevent this possible damage.

There is not much danger of this sort to be expected from the heavier and nonvolatile petroleum products because there is no combustible vapor on the surface of the liquid. Usually storage tanks if insulated from the earth are especially bonded with the ground so that any static electricity entering the tank will be discharged. A similar device is used on gasoline trucks that become insulated because of the rubber tires and use is made of a trailing chain to make the bond with the ground. Station pumps are now fitted with long metallic nozzles so that there will be close contact with the tank of the car while the gasoline is flowing into the tank and no gap condition possible.

BRISTOL'S *sensitive actuating elements* standard in this New Case


MOUNTING LUGS
DOOR HINGES
Door hinges integral with case. Mounting lugs to same drilling dimensions as old cases.
Model 40MF, for flush mounting. Door is held shut by screw knob. Moisture-proof!
Front view of BRISTOL'S handsome new rectangular recorder case, Model 40M.
BRISTOL'S RECORDING PRESSURE GAUGE
THE BRISTOL COMPANY
A resilient sponge rubber cord gasket makes and keeps case moisture-proof.
A single latch, of the compression design, shuts door tight. Easy to open, easy to shut.
View showing lower part of Model 40M, for wall mounting. Note strong, rugged design.

EXEMPLIFYING craftsmanship to a degree that proclaims a marked advance in instrument construction, BRISTOL'S new Model 40M Case possesses both handsome appearance and genuine commercial utility.

Of the popular rectangular form first introduced by BRISTOL in 1908, Model 40M is splendidly proportioned. It is so designed that it can accommodate BRISTOL'S most sensitive actuating elements which for years have been accepted by industry as the standard of accuracy.

This distinctive new model is pressure-cast of corrosion-resisting aluminum alloy. It has an inherently smooth surface that assures an attractive finish either in black, white or aluminum as specified.

Light in weight, strong, rigid, Model 40M is of a self-reinforcing type. A permanently resilient sponge rubber cord door gasket makes and keeps the case dust-proof, moisture-proof and fume-proof. Only a single toggle clamp, of a unique "compression" design, is needed to shut the door absolutely tight. This clamp is both quick opening and quick closing.

Substantial door hinges integral with case, sprung metal ring for holding glass window, inverted pen arm, single or multiple records, surface or flush mounting, front, top or back connections are other features that reflect the excellence of BRISTOL'S design and workmanship.

A request brings complete information.

These BRISTOL'S Recorders will be equipped with the new case: Pressure, Vacuum, and Liquid Level Gauges; Liquid, Vapor and Gas-Filled Thermometers; Voltmeters, Ammeters, Frequency Meters; Electrical and Mechanical Operation Recorders; Psychrometers; Free Vane Air Operated Controllers; Long Distance Transmitting and Receiving Systems.

THE BRISTOL COMPANY ~ WATERBURY ~ CONNECTICUT

Branch Offices: Akron, Birmingham, Boston, Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco

TRADE MARK

BRISTOL'S

REG. U.S. PAT. OFF.

INSTRUMENTS FOR INDICATING RECORDING CONTROLLING SINCE 1889

Oil Industry Equipment and Supplies

NEW HEAVY-DUTY POWER DEVELOPED BY OIL WELL

The Oil Well Supply Co. announces the new Imperial No. 80 oilbath geared power for heavy duty pumping, with a rated capacity of 80-horsepower at 20 r.p.m., 115-horsepower at 30 r.p.m. This power was developed to eliminate the unwieldy proportions of the very large bandwheel powers and the large structures necessary to house these big wheels, as well as to reduce the rather high maintenance cost of bandwheel belts. The No.

80 is an extremely rugged design of the overpull eccentric type—driven through double reduction gears. The base and spindle are cast integrally assuring alignment of the unit and an oil-tight reservoir for the oil bath. The eccentrics and straps have unusually heavy cross sections and wide bearing surfaces.

Easily renewable bronze spindle bushings, babbitt lined eccentric straps and case hardened clevis pin bushings are some of the features. Timken roller bearings support the high-speed pinion shaft and the intermediate speed shaft, the only two rotating shafts in the power. The main gear and the two eccentrics are all keyed together and rotate as a unit about the spindle, with their weight carried on a heavy ball bearing. The No. 80 may be belt driven by a gas engine or electric motor, or direct connected to a motor.

The combination of oil bath and return force feed systems insures adequate and positive lubrication to all moving parts of the power. All gears and some of the antifriction bearings run in the 35-gallon oil bath in the gear-case. Those bearings that are above the oil bath are fed by individual positive force feed oil lines from a mechanical lubricator, chain-driven from the pinion shaft. Oil from these bearings drains back into the main oilbath, from which a supply pipe leads to the force-feed lubricator to complete the return system.

NEW POOLE COMPANY FORMED

The Poole Foundry & Machine Co., Woodberry, Baltimore, Md., has been organized to conduct the former business and plant of the Poole Engineering & Machine Co. S. P. Brady is president, S. P. Brady, Jr., vice president, and L. M. Ricketts secretary and treasurer. Poole Products include flexible couplings, reduction gears, machine molded and cut gears, gray iron and semisteel castings, machine work and special machinery.

The Worthington Pump & Machinery Corp., Harrison, N. J., has prepared the following publications, which will be sent on request: Multi-V-Drives (rubberized cord belts operating in V-grooved sheaves), 12-page bulletin L-400-B2A; air compressors, vertical single-cylinder, two stage, 10.7 to 61 cubic feet per minute displacement, 4-page bulletin L-620-82; Diesel engines, stationary, 6-page bulletin S-500-82 covering 50 to 150-horsepower, 6-page bulletin S-500-81 covering 225 to 450-horsepower; gas engines, vertical 4-cylinder, 6-page bulletin S-550-83 covering 270 to 540-horsepower, 6-page bulletin S-550-82 covering 450 to 1,200-horsepower.

AMONG THE EQUIPMENT HOUSES

George S. Whyte, president of the Macwhyte Co., wire rope manufacturer, Kenosha, Wis., has been re-elected president of the city council of Kenosha.

The American Steel & Wire Co., a subsidiary of the United States Steel Corp., has moved its Chicago warehouse from 403 Lake Street to its new building at 2364 South Ashland Avenue.

W. L. Allen, chairman of the board of the Sheffield Steel Corp. and director and member of the executive and finance committee of the American Rolling Mill Co., has resigned to engage in consulting work.

The Mercon Regulator Co., 1 LaSalle Street, Chicago, has appointed the following district agents: E. F. Espenschied, 1008 Hill Building, Washington, D. C.; M. N. Dannenbaum, 709 Bankers Mortgage Building, Houston, Tex.; Cowles & Co., 721 Mercantile Bank Building, Dallas, Tex.; Boiler Equipment Service Co., 686 Greenwood Avenue, Atlanta, Ga.; Cothran-Bayles Co., Commercial Bank Building, Charlotte, N. C.

George L. Hurst, consulting mechanical engineer, is handling sales of the Farrel-Sykes line of gears, speed reducers, gear drives and gear cutting machines in the San Francisco territory.

The Lincoln Electric Co. of Cleveland, Ohio, has appointed the Great Northern Tool & Supply Co. as distributor for Lincoln products in Montana and Wyoming.

SHAND & JURS ANNOUNCE INTERNAL SAFETY VALVE

Announcement is made by the Shand & Jurs Co., Berkeley, Calif., of an internal safety valve for additional protection to the outlet and inlet lines of oil reservoirs. It is controlled remotely by a winch either on top of the reservoir or carried over to a safe distance from it by cable connections. The valve has two covers, one small and one large. The small one is permitted to open first, to balance the pressure and thus permit the opening of the larger valve easily. The cable can be arranged with fusible connections so that in the event a fire should occur when the valve is open, the valve will close automatically.

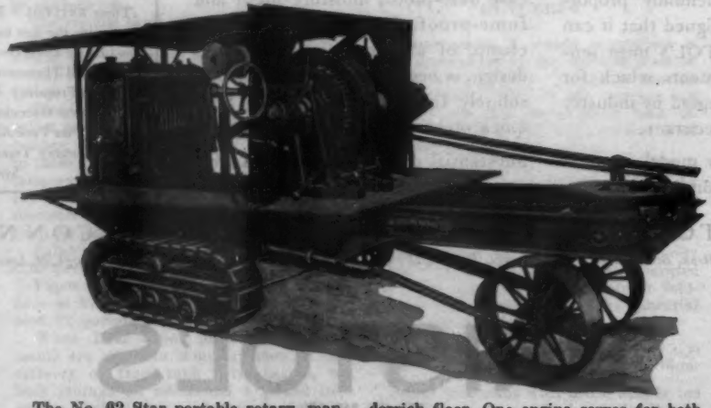
A large ring at the top is provided for a fishing job in the event that the cable should become broken or not available. The ring can be engaged with a hook, should this be necessary. This safety valve is said to have proved very effective on large reservoirs. It is made up to 18-inch.

CONTAINER IMPERVIOUS TO GREASE INTRODUCED

Drumtite paper containers, a recently invented product, put on the market by the Drumtite Container & Closure Co., 1452 Broadway, New York, are expected to prove a convenience to manufacturers and distributors of oil and grease products. The Drumtite containers, with Drumtite closures, are said to be waterproof, leakproof, oilproof, greaseproof and moisture-proof. They are made from hydroleum board, another new product, which is pure white, stout and sturdy and requires no waxing or paraffining.

Drumtite containers and closures come in several types, styles and models which may be made adaptable to almost any requirement. They have, among other features, reinforced seams, reinforced bodies, reinforced top and bottom closures, scorings for inserting glass or straw tubes to extract the contents without disturbing the closures; and no metal can come in contact with the contents.

STAR PORTABLE ROTARY WILL DRILL 2,000-FOOT HOLE

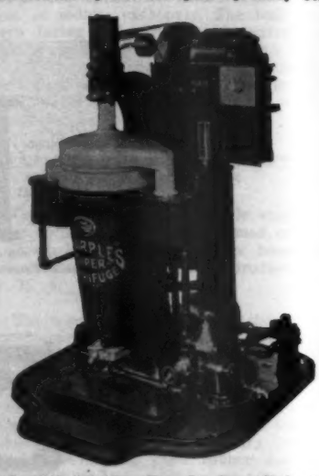


The No. 62 Star portable rotary, manufactured by the Star Drilling Machine Co., Akron, Ohio, and Long Beach, Calif., is designed to offer savings in moving and rigging up expense, plus the operating efficiency of a standard type rotary. As illustrated it has the drawworks, table and power unit mounted permanently on the machine frame, which reduces the rigging up time. The front axle assembly is removed quickly and the front part of the machine frame forms a part of the derrick floor. One engine serves for both moving and drilling. The unit can be used with any standard type derrick and mud pump. For shallow wells it can be equipped with a portable mast.

The No. 62 portable rotary is conservatively rated at 2,000-foot capacity, and will handle either 3½-inch or 4½-inch drill pipe. Controls are arranged the same as on a standard type rotary. The machine can also be equipped with special bailing reel.

NEW OIL PURIFIER UNIT ANNOUNCED BY SHARPLES

A new model oil-purifying plant designed especially for purification of Diesel engine fuel and lub oil, turbine lub and other miscellaneous types of lub oil, is announced by the Sharples Specialty Co.



of Philadelphia, Pa. It is called the Sharples En Bloc oil-purifier. The new model combines an oil-purifier of high centrifugal force with pumps, heaters, push-bottom controls and accessories, all mounted on a common base, and piped and wired together so that the installation requires only two pipe connections and one electrical connection. The Sharples centrifuge of the enclosed vaportite model is used to remove impurities such as dirt, grit, carbon, sludge and water from the oil. The centrifuge develops a force of over 13,000 times gravity.

BARBER-GREENE OFFERS ANTIFRICTION CARRIER

A new antifriction conveyor carrier put on the market by the Barber-Greene Co., Aurora, Ill., embodies improvements and simplifications. The roller bearings (Shafer) are of an exclusive design and principle, being self-aligning and taking thrust as well as radial load.

Each size of carrier has only one size roller unit, making these units and component parts interchangeable. The Barber-Greene carrier is made to interchange with any standard carriers for making replacements.

The roller is made of 5½-inch diameter seamless tubing No. 9 gauge thick metal. The ends are made of pressed steel with the outer roller race inserted under pressure.

The spindle, three-quarters of an inch in diameter, is made of selected cold rolled steel drilled and tapped on each end for grease and alemite, slotted to fit in the end brackets, and provided with two flats to lock the grease-seal washers. The spindle is drilled and reamed at each end for taper pins. The bearings are held in by the two labyrinth seal washers, shimmed so as to keep bearings tight. There are three collar spacers between the bearing race and the taper pins. In case of wear on the bearings or if for any reason the bearings should be tightened up, it is a simple matter to take out the taper pin on one side, insert necessary shim, and drive in the tapen pin again.

The load rating of each roller bearing is 450 pounds. By using a factor of safety of 4½ each roller can carry a load of 200 pounds or the entire carrier a load of 600 pounds. The rounded edge of the roller protects the belt.

Drain water from Compressed Air Tanks with dependable ARMSTRONG TRAPS

When air receiving tanks are drained by Armstrong Traps, as shown in the accompanying illustration, there is no chance of moisture in the air supply and the cost of manual operation of the drain valves is eliminated.

Most refineries have standardized on Armstrong Traps for steam applications. The same dependable service is available on compressed air lines. The fact that the traps cannot airbind in regular steam service is a positive indication of their ability to drain water and oil from compressed air. No equalizing lines are necessary—simply screw the Trap on the end of the line to be drained.

The common applications of Armstrong Traps in air service are at all tanks, at drip points, on long lines, and with air separators at the compressor plant or near the air using equipment.

The Armstrong representative in your territory will gladly discuss any application on compressed air service that you have in mind.

ARMSTRONG MACHINE WORKS
868 Maple Street Three Rivers, Michigan

OGJ 6-2 Gray

CF

FULTON
"V-Port" Motor Valves

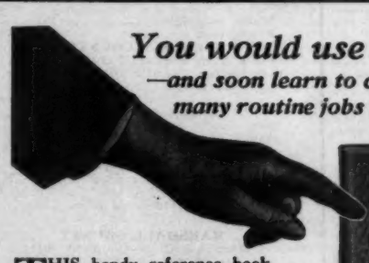
THE "V-Port" gradual opening valve here shown is most commonly used with flow controllers, temperature controllers, and instrument-type auxiliary controlled pressure regulators in oil refinery and various industrial applications. It can be furnished for either direct action, in which diaphragm pressure causes the valve to close, or indirect action, in which diaphragm pressure causes it to open. Sizes from ½-inch up are available, all with diaphragms of ample area to insure complete and dependable throttling action. Write for descriptive circular with table of types and sizes available.

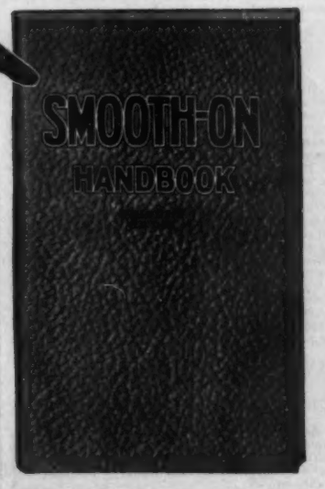
The Chaplin-Fulton Manufacturing Company
28-40 Penn Ave. Pittsburgh, Pa.

REPRESENTATIVES:
WESTCOTT & GREIS, Inc., *Sales and Service*
Dallas—Tulsa
C. H. COLLINS, 628 Dwight Building, Kansas City, Mo.
HIMELBLAU, AGAZIM & CO., 30 North Dearborn St., Chicago, Ill.
Or Any Jobber

Manufacturers of a varied line of control appliances for the oil and gas industry.

You would use it every week!
—and soon learn to consult its pages on many routine jobs and emergency repairs





THIS handy reference book, gives exactly the information you want on making tight joints and stopping leaks on hot and cold oil lines, gasoline, steam and water lines, at joints, seams and cracks in boilers, making emergency repairs to pressure shells, etc.

The methods outlined will save time and labor under many refinery, pipe line and power plant conditions and represent the very best practice.

Get the booklet by mailing the coupon and get Smooth-On No. 1 in 1 or 5-lb. tin or 25 or 100-lb. keg from your nearest supply house, or if necessary, from us direct.

SMOOTH-ON Mfg. Co., Dept. 66
570 Communipaw Ave., Jersey City, N. J.
Please send copy of SMOOTH-ON HANDBOOK.
Name _____
Address _____
6-2-32

Do it with **SMOOTH-ON**

Summary of Operations in All Fields for April, 1932

SUMMARY OF ALL FIELDS
Wells Completed

	Comp.	Prod.	Dry	Gas
Eastern	93	281	14	15
Central Ohio	39	68	8	17
Lima	6	215	0	2
Indiana	14	255	7	5
Michigan	16	18,295	5	1
Kentucky	48	1,460	15	0
Illinois	4	0	4	0
Kansas	43	14,556	13	1
Oklahoma	79	55,137	33	7
North Central Texas	101	2,723	63	5
E. Cent. and E. Tex.	499	34,074	26	1
East Texas gas area	3	0	5	3
West Texas	13	835	9	1
Panhandle Texas	9	3,094	0	1
Gulf Coast	64	36,220	23	3
Southwest Texas	77	2,562	44	2
North Louisiana	13	2,230	7	2
Arkansas	4	300	3	0
Mississippi	5	0	0	5
Montana	1	0	1	0
Wyoming	3	128	0	0
Colorado	1	0	0	1
New Mexico	2	6,194	0	0
Total April	1,132	168,731	383	81
Total March	962	125,639	217	91
Difference	170	43,192	65	10

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Eastern	58	119	177
Central Ohio	21	68	89
Lima	4	24	28
Indiana	1	61	62
Michigan	46	86	132
Kentucky	9	66	75
Missouri	0	1	1
Tennessee	0	14	14
Illinois	1	21	22
Kansas	25	127	152
Oklahoma	89	280	369
North Central Texas	48	147	195
E. Central and E. Tex.	333	374	707
East Texas gas field	4	30	34
West Texas	22	100	122
Panhandle Texas	12	41	53
Gulf Coast	10	123	133
Southwest Texas	25	113	138
North Louisiana	38	48	86
Arkansas	8	32	40
Mississippi	6	11	17
Alabama	3	3	6
Montana	16	49	65
Wyoming	11	64	75
Colorado	11	66	77
New Mexico	6	47	53
Utah	1	19	20
Total April	807	2,134	2,941
Total March	748	1,883	2,631
Difference	59	251	310

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Cotton	1	0	1	0
Creek	16	390	10	1
Greer	1	0	1	0
Hughes	2	1,247	0	0
Lincoln	2	0	1	1
Le Flore	1	0	1	0
Marshall	2	25	0	0
Muskogee	6	20	5	0
Okfuskee	4	130	0	2
Okmulgee	10	165	3	2
Oklahoma	3	45,902	0	0
Osage	3	25	1	0
Pawnee	3	0	2	1
Pontotoc	4	399	1	0
Pottawatomie	2	1,658	0	0
Seminole	5	4,780	1	0
Stephens	5	346	2	0
Tulsa	1	15	0	0
Wagoner	4	5	2	0
Total April	79	55,137	32	7
Total March	79	38,125	26	12
Difference	0	17,012	6	5

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Alfalfa	0	2	2
Atoka	0	1	1
Beckham	1	5	6
Blaine	0	1	1
Caddo	0	4	4
Canadian	0	1	1
Carter	1	2	3
Coal	0	2	2
Cherokee	0	1	1
Cleveland	1	0	1
Comanche	0	2	2
Creek	10	35	45
Custer	1	0	1
Garfield	2	2	4
Garvin	0	1	1
Grady	2	1	3
Grant	1	1	2
Hughes	2	5	7
Haskell	0	3	3
Jefferson	0	2	2
Kay	0	6	6
Kiowa	0	1	1
Latimer	0	2	2
Lincoln	0	4	4
Logan	0	4	4
McIntosh	0	3	3
Marshall	1	5	6
Muskogee	0	12	12
Noble	1	9	10
Okfuskee	0	7	7
Oklahoma	41	57	98
Okmulgee	4	14	18
Osage	5	10	15
Pawnee	0	8	8
Pittsburg	0	3	3
Pontotoc	1	10	11
Pottawatomie	4	8	12
Rogers Mills	0	2	2
Seminole	5	20	25
Stephens	3	8	11
Tillman	0	1	1
Tulsa	1	10	11
Washita	1	2	3
Wagoner	1	5	6
Total April	89	280	369
Total March	65	248	313
Difference	24	32	56

WELLS COMPLETED

COTTON COUNTY

36-1s-10w Wirt Franklin Pet. Corp. 4.. dry

Wells completed 1
Dry 1

CREEK COUNTY

6-18- 8 Hillis, Wisconsin Oil & Gas 1. dry
13-19- 9 Weaver "C", A. A. Bailey O. & G. Co. 2 30
4-18- 7 Atkins, Sand Springs Home Oil Co. 13 ..... dry
34-18-10 Tate, O. M. Irelan 1 ..... dry
13-19- 8 Weaver, The Texas Company 9 55
7-19- 9 Fish, Gled Oil Co. 1 ..... dry
29-19- 9 Koch, Gled Oil Co. 9 150
29-17-12 Reynolds, Reynolds, Ben Curtis et al 1-A ..... dry
15-19- 7 Young, R. E. Freeman et al 1. dry
16-17-11 Weaver, H. E. Dowd et al 1-B. dry
28-17-11 Watkins, McCurry et al 2 .... dry
17-16- 8 Posey, National Investors Co. 1 dry
20-16-10 Garrett, Hanan & Grant 1 .... dry
21-15- 8 Wilson, R. Shamblin et al 1 .. 80
36-19- 8 Grissel, Gled Oil Co. and Elson 1 ..... gas
20-19- 9 Bible, Johnson Oil & Ref. Co. 2 75

Wells completed 16
Production 390
Dry 10
Gas 1
Gas production 1,250,000

GREER COUNTY

23-7-21w Murphy, H. A. French et al 1. dry

Wells completed 1
Dry 1

HUGHES COUNTY

9-7-8 Bruner, Mid-Continent Pet. Corp. 1 575
Tiger, Mid-Continent Pet. Corp. 1 672

Wells completed 2
Production 1247

LINCOLN COUNTY

17-14-5 Taylor, Barnsdall Oil Co. et al 1 dry
8-13-6 Beebe, Atlantic Oil Prod. Co. et al 1 ..... gas

Wells completed 2
Dry 1
Gas 1
Gas production 27,000,000

LE FLORE COUNTY

26-7-26 Rateree, Sooner O. & G. Co. 1. dry

Wells completed 1
Dry 1

MARSHALL COUNTY

30-5s-6 Marshall, C. B. Goddard Oil Co. et al 6 17
30-7s-6 Minters, C. Davis et al 1 8

Wells completed 2
Production 25

MUSKOGEE COUNTY

9-13-18 Newton, R. D. Valentine et al 1 dry
34-16-18 M. Richards, R. B. Hash et al 1 dry
9-15-18 E. Spaulding, H. L. Jolly 1 .. dry
17-14-17 Lewis, M. S. Mussellem 1-A .. 10
4-15-18 E. Spaulding, J. V. Dunbar 2.. dry
18-13-16 N. Brown, Robinson Oil Co. 1-A dry

Wells completed 6
Production 20
Dry 5

OKFUSKEE COUNTY

16-11-11 Holmes, H. Stekoll et al 25.... 90
22-12-11 Fee, Rossiter Oil Co. 1-A ..... gas
21-12-11 Hopping, Sheli Pet. Corp. et al 2 ..... gas
23-11-11 Likowski, F. A. Havel 1-A 40

Wells completed 4
Production 130
Gas 2
Gas production 8,500,000

OKMULGEE COUNTY

26-14-14 Flint, J. L. Selby 19 75
6-12-14 J. Daniel, A. Thompson 1 .... dry
19-12-14 S. Barnett, Penrod & Thompson 1 ..... gas
23-12-14 Anderson, Jordan et al 3 ..... gas
15-13-15 J. King, Iron Mountain Oil Co. 2 5
26-14-14 Flint, J. L. Selby 4-A 30
1-12-13 Daniel, J. H. Rebold 1 ..... dry
14-14-14 B. Colbert, J. E. Wallace 4 .. 20
26-14-14 P. Flint, J. E. Wallace 5 ..... dry
15-13-14 L. Doyle, F. E. Cuseck 5 35

Wells completed 10
Production 165
Dry 3
Gas 2
Gas production 15,500,000

OKLAHOMA COUNTY

2-11-3w Terminal, T. B. Slick Estate 3 (4 hrs.) 6742
2-11-3w Henry, Spring Rose Drlg. Co. 1 (gasoline) 100
15-11-3w Smith, Ocate Oil Co. 2 (4 hrs.) 5054
22-11-3w Deighler, Phillips Pet. Co. 1 (8 hrs.) 587
3-11-3w Stigall, Hall & Briscoe 1 (4¾ hrs.) 13362
Kry, Phillips Pet. & I.T.I.O. Co. 1 (5½ hrs.) 10080
Classen-Edwards, T. B. Slick Estate 10 (4 hrs.) 4767
15-11-3w Coats, I. H. Korn et al 1 (4 hrs.) 5210

Wells completed 8
Production 45902

OSAGE COUNTY

29-20-12 Lindy Oil Co. 3 25
Lindy Oil Co. 4 ..... dry

Wells completed 2
Production 25
Dry 1

PAWNEE COUNTY

21-20-10 Payne, Roy Bean et al 1 ..... dry
20-20-10 Pierce, A. J. Bookout 1-A .... dry
9-20- 7 Rules, Ed Reese 1 ..... gas

Wells completed 3
Dry 2
Gas 1 1
Gas production 500,000

PONTOTOC COUNTY

22-5-6 Brown, Rabial Oil Co. 1 192
5-5-8 Milner, Max Westheimer 6 22
29-5-8 Russell, Gus Dalney 1 ..... dry
32-5-5 Buck "C," Stanolind Oil Co. 2.... 185

Wells completed 4
Production 399
Dry 1

POTTAWATOMIE COUNTY

14-6-3 Archer, Mid-Continent Pet. Corp. 3 305
35-7-4 Monnet, Carter Oil Co. et al 1... 1333

Wells completed 2
Production 1638

SEMINOLE COUNTY

2-8-5 J. Tiger, Amerada Pet. Corp. 6.. 105
36-7-8 Samele, Tulsa Oil Co. 1 1835
15-9-7 Jonah, Blackwell O. & G. Co. 1-A dry
3-8-5 L. Tiger, Amerada Pet. Corp. 3.. 705
19-7-8 Eliza, The Texas Company 2 2135

Wells completed 5
Production 4740
Dry 1

STEPHENS COUNTY

2-2s-5w Green, Pace et al 2 50
Dare, Continental Oil Co. 2 36
1-2s-5w Dare, Crane & Rankins 1 ..... dry
2-2s-5w Medley, P. L. Gilbert 1 ..... dry
22-2s-7w Dilley, George Pace 1 250

Wells completed 5
Production 346
Dry 2

TULSA COUNTY

5-17-14 Chisholm, Bowder & George 1-A 15

Wells completed 1
Production 15

WAGONER COUNTY

26-18-15 M. Drew, Sheridan Oil Co. et al 1 ..... dry
29-18-16 Woody, J. H. Striker et al 4.. dry
30-18-15 Drew, C. A. Mechlin et al 1-A 5
13-16-18 Davis, R. A. Godfrey 1 ..... dry

Wells completed 4
Production 5
Dry 2

EAST TEXAS FIELDS

County—	Comp.	Prod.	Abd.	Gas	Rgs.	Drg.	Ttl.
Anderson	0	0	0	0	1	1	2
Angelina	0	0	0	0	1	0	1
Bowie	0	0	0	0	0	2	2
Cherokee	2	22	1	0	2	3	5
Dallas	2	0	2	0	1	0	1
Delta	1	0	1	0	1	1	2
Ellis	1	0	1	0	1	2	3
Franklin	0	0	0	0	0	1	1
Gregg	283	*20,865	4	0	216	147	363
Hill	0	0	0	0	0	1	1
Hunt	1	0	0	0	0	0	0
Hopkins	0	0	0	0	1	1	2
Jasper	0	0	0	0	0	1	1
Kaufman	0	0	0	0	0	1	1
Lamar	0	0	0	0	0	4	4
Leon	0	0	0	0	1	1	2
Morris	0	0	0	0	0	1	1
Nacogdoches	4	0	4	0	1	2	3
Newton	0	0	0	0	0	1	1
Polk	1	0	1	0	1	2	3
Rains	1	0	1	0	0	0	0
Red River	0	0	0	0	0	2	2
Robertson	0	0	0	0	0	2	2
Rockwall	0	0	0	0	0	1	1
Rusk	131	*5,903	2	1	53	122	176
Sabine	0	0	0	0	0	1	1
San Augustine	0	0	0	0	0	1	1
Smith	33	*2,224	2	0	18	38	56
Titus	0	0	0	0	0	1	1
Upshur	25	*1,087	2	0	29	20	49
Van Zandt	9	*563	3	0	5	12	17
Wood	0	0	0	0	1	1	2
Total Apr.	499	34,074	26	1	333	374	707
Total Mar.	406	29,072	25	1	277	280	557
Difference	93	5,002	1	0	56	94	150

*Figures represent first hour's gauge, unless otherwise given.

WELLS COMPLETED
CHEROKEE COUNTY

V. C. Clopton and Hawkins' No. 1 A. P. Pace ..... abd
Merry Bros. and Perini's No. 1 Annie Kelly, through 1-in. tubing choke through 3-in. tubing (10 min.) 32

DALLAS COUNTY

Joe Wilson's No. 1 Fee ..... abd
Paris' No. 1 Wilkinson ..... abd

DELTA COUNTY

Commerce Development Co.'s No. 1 Abolwich ..... abd

ELLIS COUNTY

Worthem Pet. Co.'s No. 1 Cerf ..... abd

GREGG COUNTY

	1-hr. gauge
Amerada Pet. Corp.'s No. 5 Killingsworth, through 1-in. tubing choke	152
Arkansas Fuel Oil Co.'s No. 3-A McKinley, through open tubing (½ hr.)	117
Arkansas Fuel Oil Co.'s No. 3-A McPherson, through open tubing (¼ hr.)	65
Atlantic Oil & Prod. Co.'s No. 5 Duncan, through tapered tubing	22
Atlantic Oil & Prod. Co.'s No. 8 Fuller, through tapered tubing	62
Barnsdall Oil Co.'s No. 1 Adams, through 1-in. tubing choke	159
Barnsdall Oil Co.'s No. 4 R. E. L. Ferguson, through 1-in. tubing choke	89
Bristow & Rowan's No. 2 W. A. Moore, through 1-in. tubing choke (45 min.)	73
Cal-Pet. Corp.'s No. 3 Tuttle, through 1-in. tubing choke	146
Chaplin & Bass' No. 2 G. T. Mattox, through open tubing	65
Cranfill & Reynolds' No. 3 J. B. Burton, through open tubing	37
Darby Pet. Co.'s No. 4 Ritchey, through open tubing (10 min.)	23
Demotte et al's No. 1 T. L. Bray, through 1-in. tubing choke (¼ hr.)	45
Devonian Oil Co.'s No. 3 Ingram, through open tubing (½ hr.)	96
East Texas Ref. Co.'s No. 4 Hindman, through open tubing (½ hr.)	98
East Texas Shore Line Co.'s No. 1 J. C. Walters	abd
Fain & McGaha's No. 2 A. Tooke, through 1-in. tubing choke (¼ hr.)	18
Gulf Prod. Co.'s No. 2 M. F. Barker, through ⅝-in. tubing choke	120
Gulf Prod. Co.'s No. 4 A. Neeley, through ⅝-in. tubing choke	130
Harry Hamberry et al's No. 3 F. L. Bray, through ⅝-in. tubing choke (¼ hr.)	25
J. N. Hayner's No. 2 Tenery, through ⅝-in. tubing choke	102
Heyser & Heard's No. 3 Thrasher & Stuckey, through ⅝-in. tubing choke (40 min.)	73
Humble Oil & Ref. Co.'s No. 4 Armstrong, through ⅝-in. tubing choke	110
Jackson & Bradstreet's No. 1 M. Young, through open tubing (¼ hr.)	43
King & Massingale's No. 2 E. E. Anderson, through ⅝-in. tubing choke	90
Lucey Pet. Co.'s No. 4 R. Christian, through open tubing (½ hr.)	110
Lucey Pet. Co.'s No. 4 McBee, through 1-in. tubing choke (¼ hr.)	24
Magnolia Pet. Co.'s No. 4 M. Dyer, through open tubing	232
O. G. Murphy's No. 4 Doby, through open tubing (½ hr.)	92
Roeser & Pendleton's No. 2-A W. R. Nicholson, through open tubing	180
Rowan & Nicholson's No. 2-A Todd, through open tubing (½ hr.)	98
Selby Oil & Gas Co. and Lewis' No. 3-C Snavely heirs, through open tubing	280
Shell Pet. Corp.'s No. 8 J. Moore, through tapered tubing (½ hr.)	30
Lewis Stikes et al's No. 3 G. Stencil, through 1-in. tubing choke (¼ hr.)	25
Silver Star Oil Co.'s No. 1 Thad Snoddy, through 1-in. tubing choke (40 min.)	72
Sinclair Oil & Gas Co.'s No. 5 M. Lawson, through open tubing (30 min.)	72
Stanolind-Simms et al's No. 4 Albright, through open tubing (¼ hr.)	58
Sun Oil Co.'s No. 4 Gray, through open tubing	40
W. F. Turner's No. 5 A. Jones, through 1-in. tubing choke	160
J. C. Whittington's No. 3 Bumpass, through 1-in. tubing choke	60
Yount Lee Oil Co.'s No. 4-A Ike Deason, through 11/16-in. tubing choke	96
Bortex Oil Corp.'s No. 2 A. Spear, through 2-in. tubing choke (¼ hr.)	50
Byrd-Frost Oil Co.'s No. 1 A. Strong, pinched through tubing, per day	72
Central Com. Oil Co.'s No. 2-A A. King, through open tubing	105
Golding & Murchison's No. 5 L. P. Griffin, through 1-in. tubing choke (½ hr.)	95
Gulf Prod. Co.'s No. 6 Culver, through ⅝-in. tubing choke	78
Gulf Prod. Co.'s No. 6 Muckelroy, through ⅝-in. tubing choke	87
Gulf Prod. Co.'s No. 8 R. H. Still, through ⅝-in. tubing choke	70
Imperator Oil Co.'s No. 1 M. T. Cole, through open tubing (½ hr.)	62
Island Oil Co.'s No. 1 J. A. Knowles, through open tubing (½ hr.)	40
C. L. McMahon's No. 2 Joe King, through various chokes	72
Magnolia Pet. Co.'s No. 4 John Redford, through 2¼-in. tubing choke	180
National Oil Co.'s No. 1 L. Martin, pinched through tubing, per day	72
F. W. O'Byrne's No. 1-A W. Daniels, through 1-in. tubing choke (10 min.)	32
Patrick Pet. Co.'s No. 1 J. R. Watson, through 1-in. tubing choke (20 min.)	25
R. C. Rochello's No. 1 George Walters, pinched, per day	72
Prairie Oil & Gas Co.'s No. 2 H. J. Thomas, through ⅝-in. tubing choke	107
Shell Pet. Corp.'s No. 2 H. F. Laird, through tapered tubing (½ hr.)	16
Shell Pet. Corp.'s No. 1 M. J. Register, through tapered tubing (½ hr.)	15

Sinclair Oil & Gas Co.'s No. 5 S. G. Andrews, through open tubing (⅛ hr.).. 72
Sinclair Oil & Gas Co.'s No. 12 A. A. King, through open tubing (⅛ hr.).. 72
Harry M. Holden's No. 1 Register, through open tubing (⅛hr.) 72
Sun Oil Co.'s No. 2 C. Brown, through pinched tubing, per day 72
Paul Doran et al's No. 1 Samples, through pinched tubing, per day 72
Tidal Oil Co.'s No. 2 Tom Bell, through open casing and tubing 60
Trapshooter Riley's No. 3 Mitchell, through open tubing (⅛ hr.) 41
Universal Oil Co.'s No. 1 Adkins, through pinched tubing, per day 72
P. J. Alco's No. 1 F. Thomas, through open tubing (¼ hr.) 90
Amerada Pet. Co.'s No. 5 Bumpass, through 1-in. tubing choke 122
Amerada Pet. Co.'s No. 1 Continental State Bank, through 1½-in. tubing choke 145
Atlantic Oil & Prod. Co.'s No. 2 Clements, through tapered tubing 33
Atlantic Oil & Prod. Co.'s No. 4 McKinley, through tapered tubing 33
Atlantic Oil & Prod. Co.'s No. 1-A A. Tooke, through tapered tubing 33
Atlantic Oil and Sun Oil Co.'s No. 3 M. Hays, through tapered tubing 33
Atlantic and Wadley's No. 3 Turner estate, through tapered tubing 22
J. E. Beard's No. 1 J. M. Ferrell, through ⅝-in. tubing choke (⅛ hr.) 37
Black-Collins and Stroube's No. 2 J. L. Spurrier, through open tubing 120
J. S. Bond et al's No. 1 J. H. Alexander, through 1-in. tubing choke... 38
Cox & Hammon's No. 5 Fee, through ⅝-in. tubing choke (10 min.) 10
Cox & Hammon's No. 2 Lacy, through 1-in. tubing choke 75
Cox & Hammon's No. 8 L. A. Rodden, through open tubing 151
Cox & Hammon's No. 11 L. A. Rodden, through open tubing 150
Deep Rock Oil Corp.'s No. 2 H. Prichard, through 1-in. tubing choke 71
East Texas Ref. Co.'s No. 3 Tuttle, through 1-in. tubing choke 75
Farland et al's No. 1 Alexander, through open tubing (½ hr.) 50
Gilcrease Oil Co.'s No. 4 A. Christian, through open tubing (¼ hr.) 31
Glasscock Bros.' No. 1 E. Bacle, through 1-in. tubing choke 72
Gulf Prod. Co.'s No. 6 Fishburn, through ⅝-in. tubing choke 120
Hawkeye Pet. Co.'s No. 2 McKinley, through 1-in. tubing choke 71
D. W. Henke's No. 2 J. M. Christian, through 1-in. tubing choke 76
Humble Oil & Ref. Co.'s No. 12 J. K. Edwards, through ⅝-in. tubing choke 88
Humble Oil & Ref. Co.'s No. 2 J. H. Sheppard, through ⅝-in. tubing choke 48
W. T. Lee et al's No. 1 Fee, through 1-in. tubing choke (¼ hr.) 32
Magnolia Pet. Co.'s No. 2 S. Christian, through open tubing (25 min.) 72
Magnolia Pet. Co.'s No. 2 Parnell, through open tubing 233
Mission Oil Co.'s No. 2 Matthews, through open tubing (¼ hr.) 60
Peterson & Merritt's No. 1 Hamm, through ⅝-in. tubing choke 100
Ott Phillips et al's No. 3 Chaney Jones, through 1-in. tubing choke 72
Prince Bros.' No. 2 H. M. Williams, through 1-in. tubing choke 130
A. D. Robinson et al's No. 2 L. Rodden, through 1-in. tubing choke (¼ hr.).. 27
T. S. Schroeder et al's No. 3 J. Bumpass, through open tubing (¼ hr.).. 45
Segnal & McCall's No. 4 Missie Young, through 11/16-in. tubing choke (¼ hr.) 27
Selby & Lewis' No. 5 L. C. Ingram, through 1-in. tubing choke (½ hr.) 50
Simms and Stanolind Oil & Gas Co.'s No. 5-B Fiewellen, through open tubing (¼ hr.) 35
E. L. Smith et al's No. 3 E. E. Anderson, through open tubing (¼ hr.)... 45
Southland Oil Co.'s No. 2 Colvin Christian, through 1-in. tubing choke 72
Stanolind Oil & Gas Co.'s No. 4 Cox & Rammon, through open tubing 142
Sun Oil Co.'s No. 5 Tate, through 1-in. tubing choke 68
Tidal Oil Co.'s No. 7 Castleberry, through open tubing (½ hr.) 35
Tidal Oil Co.'s No. 7 Sheppard, through open tubing (10 min.) 31
Yount Lee Oil Co.'s No. 4-C Lathrop, through 11/16-in. tubing choke 73
Yount Lee Oil Co.'s No. 1 Pine Hill Church, through 11/16-in. tubing choke 81
A.B.C. Synd.'s No. 2 McNeeley, through pinched tubing, per day 71
Atlantic Oil & Prod. Co.'s No. 5 A. Andrews, through tapered tubing 32
Atlantic and Byrd-Frost's No. 4 Wadley, through tapered tubing (20 min.) 9
Russell & Davis' No. 1 Anderson ..... abd
Gulf Prod. Co.'s No. 1 A. King, through ⅝-in. tubing choke 90
Gulf Prod. Co.'s No. 1 Nichols, through ⅝-in. tubing choke 70
Humble Oil & Ref. Co.'s No. 7 D. Thomas, through ⅝-in. tubing choke 52
Jones & O'Brien's No. 3 Hughey Ross, through pinched tubing, per day.... 73
Frank Hines' No. 1 G. Davis..... abd
Landes et al's No. 1 M. B. Hughey, through ⅝-in. tubing choke 50
Lion Oil & Ref. Co.'s No. 2 A. A. King, through 1-in. tubing choke (10 min.) 20
McBride's No. 1 Elder, through pinched tubing, per day 71
Magnolia Pet. Co.'s No. 5 M. S. Hughy, through ⅝-in. tubing choke 176
Magnolia Pet. Co.'s No. 4 Hughey, through open tubing 180
K. E. Merren et al's No. 2 Will Hawkins, through pinched tubing 71
Harry Moss' No. 4 F. Marshall, through pinched tubing, per day 71
Quad Oil Corp.'s No. 1-B Duncan, through pinched tubing, per day 71
Sam Shelbourne's No. 1 Knight & Tabor, through pinched tubing, per day 71
Solar Exploration Co.'s No. 1 J. Elder, through pinched tubing, per day... 71
Stanolind Oil & Gas Co.'s No. 3 Clayton heirs, through tubing 80
Sun Oil Co.'s No. 2 G. Reese, through open tubing 73
S. O. Thompson et al's No. 1 Cole, through ⅝-in. tubing choke (¼ hr.) 25
Tidal Oil Co.'s No. 3 C. C. Strong, through 2-in. tubing choke 80
Welch & Sandler's No. 2 D. Barrett, through pinched tubing, per day.... 71
Westheimer & Doby's No. 1 J. T. Florence ..... abd
Abernathy & Kirkpatrick's No. 1-C R. M. Woods, through various chokes, per day 71
Amerada Pet. Co.'s No. 4 Hearne, through open tubing 111
Arkansas Fuel Oil Co.'s No. 4-A P. D. Harrison, through open tubing (¼ hr.) 42
Arkansas Fuel Oil Co.'s No. 2-B Lathrop, through 1-in. tubing choke (¼ hr.) 37
Atlantic Oil & Prod. Co.'s No. 7 W. P. Duncan, through tapered tubing 35
Atlantic Oil & Prod. Co.'s No. 5 Wilson, through tapered tubing 22
Atlantic and Sun Oil Co.'s No. 4 M. Hays, through tapered tubing 22
Barnsdall and Houston Oil Co.'s No. 11 McGrede, through 1-in. tubing choke 125
Blacknight Oil Co.'s No. 1 J. G. McGrede, through 1½-in. tubing choke (¼ hr.) 45
Chaplin & Bass' No. 2 C. C. Clemmons, through open tubing (10 min.)..... 10
Cherokee Chief Oil Co.'s No. 3 D. Johnson, through 1-in. tubing choke (¼ hr.) 31
Darby Pet. Co.'s No. 4 C. C. Clemmons, through various chokes, per day.... 71
Devonian Oil Co.'s No. 4 L. C. Ingram, through ⅝-in. tubing choke 140
East Texas Ref. Co.'s No. 1 J. W. Fuller, through open tubing (¼ hr.)... 13
Empire Gas & Fuel Oil Co.'s No. 3 A. Green, through open tubing (¼ hr.) 82
Empire Gas & Fuel Oil Co.'s No. 5 L. A. Jeter, through open tubing (¼ hr.) 45
Fain & McGaha's No. 3 A. Tooke, through 1-in. tubing choke 100
F.H.E. Oil Co.'s No. 8 B. C. Christian, through 1-in. tubing choke 60
F.H.E. Oil Co.'s No. 2 M. Christian, through various chokes 71
Meridian Oil Co.'s No. 2 W. H. York, through various chokes 71
Gulf Prod. Co.'s No. 3 Barber, through open tubing 100
Humble Oil & Ref. Co.'s No. 6 Armstrong, through ⅝-in. tubing choke (¼ hr.) 15
Humble Oil & Ref. Co.'s No. 6 J. F. Boles, through ⅝-in. tubing choke.. 103
Humble Oil & Ref. Co.'s No. 3 C. C. Clemmons, through ⅝-in. tubing choke 22
King & Massingill's No. 3 E. Anderson, through various chokes, per day.... 71
Lucey Pet. Co.'s No. 1 B. C. Christian, through various chokes, per day 71
Lucey Pet. Co.'s No. 5 McBee-Fisher, through ⅝-in. tubing choke 40
Magnolia Pet. Co.'s No. 2 H. Key, through open tubing 231
Magnolia Pet. Co.'s No. 1 Zeigler, through open tubing 232
Jim McMurray et al's No. 1 J. H. Alexander, through open tubing (½ hr.) 30
Pilot Oil Co.'s No. 1 F. Smith, through 1-in. tubing choke (½ hr.) 40
Powell & Irion's No. 1 T. P. Railroad, through 1-in. tubing choke (¼ hr.) 45
Shano Oil Co.'s No. 2 J. T. Hopkins, through 1-in. tubing choke (20 min.) 35
Smith and Dorough Oil Co.'s No. 3 Clements, through 1-in. tubing choke.. 60
Stanolind-Simms et al's No. 2-A Fiewellen, through open tubing 90
Stanolind-Simms et al's No. 3-A Fiewellen, through open tubing 107
Stanolind et al's No. 3 Key, through open tubing (½ hr.) 90
Sun Oil Co.'s No. 3-A A. Tooke, through open tubing 163
A. H. Tarver et al's No. 2 J. W. Free, through ⅝-in. tubing choke 100
The Texas Company's No. 6 E. M. Woods, through ⅝-in. tubing choke.. 140
Tidal Oil Co.'s No. 4 Lake Devernia, through open tubing (10 min.) 25
Tidal Oil Co.'s No. 4 A. Davis, through open tubing (10 min.) 29
Tidal Oil Co.'s No. 3 B. Moore, through open tubing (10 min.) 30
Yount Lee Oil Co.'s No. 3-A Maud Smith, through 11/16-in. tubing choke 75
Amerada Pet. Co.'s No. 1 C. Jenkins, through ⅝-in. tubing choke 75
Barnsdall Oil Co.'s No. 1 John Douglas, through 1-in. tubing choke (¼ hr.) 40
F. A. Bates' No. 2 M. T. Cole, through pinched tubing, per day 71
Byrd-Frost Oil Co.'s No. 4 M. B. Hughey, through 2-in. tubing choke 180
Liner, Inc.'s No. 1 J. Clayton, through pinched tubing, per day 71
D.D.D. Oil Co.'s No. 1 Sarah Dansby, through 1-in. tubing choke 120
Gulf Prod. Co.'s No. 2 W. Clayton, through pinched tubing, per day.... 71
Gulf Prod. Co.'s No. 11 Hilburn, through ⅝-in. tubing choke 82
Gulf Prod. Co.'s No. 15 Hilburn, through ⅝-in. tubing choke 77
Gulf Prod. Co.'s No. 1 E. L. Walker, through ⅝-in. tubing choke 70
Quad Oil Corp.'s No. 2-A B. Duncan, through pinched tubing, per day 71
Rajo Oil Corp.'s No. 2 McCormick, through ⅝-in. tubing choke 62
Republic Prod. Co.'s No. 3 Clayton heirs, through 1-in. tubing choke (⅛ hr.) 50
Root & Maben's No. 1 Wynne, through open tubing, per day 71
Sinclair-Prairie Oil Co.'s No. 31 M. T. Cole, through open tubing (⅛ hr.). 71
Sinclair-Prairie Oil Co.'s No. 11-B A. A. King, through open tubing (23 min.) 71
Sinclair-Prairie Oil Co.'s No. 13-B A. A. King, through open tubing (21 min.) 71
Sinclair-Prairie Oil Co.'s No. 6 Joe E. Lawther, through open tubing (25 min.) 71
Sneed et al's No. 2 Griffin Davis, through ⅝-in. tubing choke (¼ hr.) 42
Stodel Oil Co.'s No. 3 Smith, through 2-in. tubing choke (⅛ hr.)..... 62
The Texas Company's No. 3 R. B. Walls, through ⅝-in. tubing choke.. 84
F. L. Thompson's No. 3 Hilburn, through ⅝-in. tubing choke 83
Tidal Oil Co.'s No. 8 Barton, through open tubing (10 min.) 30
Tidal Oil Co.'s No. 3 Tom Bell, through pinched tubing, per day 71
Abernathy & Kirkpatrick's No. 1 A. B. Gregston, through various chokes, per day 67
Amerada Pet. Co.'s No. 3 Continental State Bank, through 1-in. tubing choke (¼ hr.) 35
Atlantic Oil & Prod. Co.'s No. 6-B Burnside, through tapered tubing 29
Atlantic and Wadley's, through tapered tubing 31
Bay Oil Corp.'s No. 2 J. M. Wheeler, through open tubing (½ hr.) 75
Robert Bowles' No. 2 J. C. McKinley, through 1-in. tubing choke (¼ hr.) 32
Bristow & Rowan's No. 3 Moore, through various chokes, per day 71
Cherokee Chief et al's No. 2 S. D. Todd, through ⅝-in. tubing choke 120
Clark & Cowden's No. 2 Wilhite, through 1-in. tubing choke (45 min.) 80
Columbia Oil & Gas Co.'s No. 2-A W. M. Harley, through tapered tubing 40
Cox & Hammon's No. 3 L. A. Rodden, through ⅝-in. tubing choke 75
East Texas Ref. Co.'s No. 2 E. C. Castleberry, through various chokes, per day 67
Harry M. Edwards' No. 1 Starr estate, through 1-in. tubing choke 66
Empire Gas & Fuel Oil Co.'s No. 4 Bumpass, through open tubing (½ hr.) 57
Empire Gas & Fuel Oil Co.'s No. 4 A. Green, through open tubing (¼ hr.) 48
Empire Gas & Fuel Oil Co.'s No. 6 L. A. Jeter, through open tubing (¼ hr.) 50
F.H.E. Oil Co.'s No. 3 J. E. Christian, Spurrier, through open tubing (¼ hr.) 58
Empire Gas & Fuel Oil Co.'s No. 2 J. L. Spurrier, through 1-in. tubing choke.. 115
Gilcrease Oil Co.'s No. 2-A A. Tooke, through open tubing (¼hr.) 34
Mike Glasscock et al's No. 1 Bacle, through ⅝-in. tubing choke 90
S. A. Guiberson's No. 3 Thrasher-Stuckey, through various chokes 67
Gulf Prod. Co.'s No. 3 J. C. Judge, through ⅝-in. tubing choke 10
Howard Pet. Co.'s No. 3 Arch Davis, through open tubing (¼ hr.) 65
Humble Oil & Ref. Co.'s No. 8 W. W. Holland, through ⅝-in. tubing choke 111
Humble Oil & Ref. Co.'s No. 5-B D. Johnson, through ⅝-in. tubing choke 108
Humble Oil & Ref. Co.'s No. 4 Mary Wells, through ⅝-in. tubing choke (¼ hr.) 12
Kewanee Oil & Gas Co.'s No. 5 T.&P. Railroad, through 1-in. tubing choke (¼ hr.) 45
Magnolia Pet. Co.'s No. 4 H. L. Foster, through open tubing 220
Meridian Oil Co.'s No. 3 T. W. Lee, through open tubing (½ hr.)..... 73
O. G. Murphy's No. 5 J. B. Doby, through various chokes 71
Navarro Oil Co.'s No. 2 Tennery, through 1-in. tubing choke (¼ hr.) 40
A. D. Robinson et al's No. 3 Lercy Rodden, through tapered tubing 32
Roeser & Pendleton's No. 3 A. Christian, through various chokes 67
Selby & Lewis' No. 16-B Snavely heirs, through various chokes 67
Selby & Lewis' No. 5-C Snavely heirs, through open tubing 250
Showers & Moncrief's No. 1 J. M. Christian, through various chokes 67
Simms Oil Co.'s No. 2 A. Christian, through open tubing 120
Sinclair-Prairie Oil Co.'s No. 4 J. W. Akins, through ⅝-in. tubing choke.. 123
Sinclair-Prairie Oil Co.'s No. 3 M. Lawson, through open tubing (¼ hr.) .. 71
E. L. Smith Oil Co.'s No. 2 Harrison, through open tubing 180
Stanolind and Simms Oil Co.'s No. 6-B Fiewellen, through open tubing (¼ hr.) 37
Sun Oil Co.'s No. 5 J. C. Gray, through tapered tubing 32
Sun Oil Co.'s No. 2 Reppon, through various chokes 67
Superior Oil Co.'s No. 3-A H. Pritchard, through open tubing (¼ hr.)..... 48
Tidal Oil Co.'s No. 5 Lake Devernia, through open tubing (10 min.) 24
Wise & Jackson's No. 2 Rose Corbin, through open tubing (10 min.) 55
Ward Oil Co.'s No. 1 W. R. Nicholson, through open tubing 80
Yount Lee Oil Co.'s No. 4 Calvin, through 11/16-in. tubing choke 84
Yount Lee Oil Co.'s No. 5-A Fenton, through 1-in. tubing choke 73
Yount Lee Oil Co.'s No. 4 Floyd Jones, through 11/16-in. tubing choke..... 105
Atlantic Oil & Prod. Co.'s No. 6-A Andrews, through tapered tubing 21
Byrd-Frost Oil Co.'s No. 5 M. B. Hughey, through pinched tubing, per day 62
Central Commercial Oil Co.'s No. 3 A. A. King, through 2-in. tubing choke (8 min.) 30
Gulf Prod. Co.'s No. 4 Cole, through ⅝-in. tubing choke 115
Gulf Prod. Co.'s No. 7 Culver, through ⅝-in. tubing choke 77
Gulf Prod. Co.'s No. 16 Hilburn, through ⅝-in. tubing choke 60
Gulf Prod. Co.'s No. 17 Hilburn, through ⅝-in. tubing choke 70
Gulf Prod. Co.'s No. 18 Hilburn, through ⅝-in. tubing choke 90
Hamill & Smith's No. 1 M. Culp, through pinched tubing, per day 62
James B. Hughes' No. 1 A. A. King, through ⅝-in. tubing choke (20 min.) 45
Humble Oil & Ref. Co.'s No. 5 D. Thomas, through ⅝-in. tubing choke 51
Island Oil Co.'s No. 2 J. A. Knowles, through open tubing (¼ hr.) 45
McLemore et al's No. 1 Adkins, through 1-in. tubing choke 24
Frank Russell's No. 1 M. Dickson, through open tubing (⅛ hr.) 20
Searight et al's No. 3 Blackman, through 1-in. tubing choke (¼ hr.).. 19
Sam P. Shelburn's No. 2 Luia Martin, through pinched tubing, per day ... 67
Sinclair-Prairie Oil Co.'s No. 17 Cole, through open tubing 71
Sinclair-Prairie Oil Co.'s No. 4 A. A. Lockhart, through 1½-in. tubing choke (½ hr.) 70
V. C. Smith's No. 1 M. B. Hughey, pinched through tubing, per day 67
Sun Oil Co.'s No. 3 G. Reese, through 2-in. tubing 84
Tidal Oil Co.'s No. 4 T. Bell, through open tubing 120
Tidal Oil Co.'s No. 5 Bivens, through open tubing 120
Tidal Oil Co.'s No. 6 Bivens, through open 5 minutes gauges 345
Tidal Oil Co.'s No. 4 M. B. Hughey, through open tubing 150
Tidal Oil Co.'s No. 5 M. B. Hughey, through open 2-in. tubing choke ... 120
Tidal Oil Co.'s No. 3 W. D. Lacy, through open tubing 75
Wheelock & Collins' No. 4 Clayton heirs, through ⅛-in. tubing choke 30

Wells completed	283
Initial production	20,863
Abandoned wells	4

HUNT COUNTY

Russell et al's No. 1 Brooks & Quattlebaum ..... abd

NACOGDOCHES COUNTY

Creighton Drlg. Co.'s No. 1 J. M. Stewart ..... abd
Gainer et al's No. 1 Neil Well ..... abd
Tex. Oklahoma Oil Co.'s No. 1 Driver abd
Joiner & Henson's No. 1 Ande Legg... abd

POLK COUNTY

Humble Oil & Ref. Co.'s No. 2-A West Texas Lumber Co. ..... abd

RAINS COUNTY

Greer et al's No. 1 Roy Harper ..... abd

RUSK COUNTY

	1-hr. gauge
Devonian and Gulf Prod. Co.'s No. 12 Motley, through ⅝-in. tubing choke	100
P. T. Fullwood's No. 1 W. W. Brightwell, pinched through tubing, per day	72
Gulf Prod. Co.'s No. 5-A C. E. Christian, through ⅝-in. tubing choke...	82
Gulf Prod. Co.'s No. 12-C C. E. Christian, through ⅝-in. tubing choke...	52
William F. Hollifield's No. 2 J. Wooley, pinched through tubing, per day ...	72
Humble Oil & Ref. Co.'s No. 2 J. T. Robertson, through ⅝-in. tubing choke	49
Jackson-Wise and Markham's No. 3 C. O. Christian, through various chokes	72
K. P. Oil Co.'s No. 4 Brock estate, through pinched tubing	72
Kirby Pet. Co.'s No. 3 J. Reddie, pinched through tubing, per day	72
Luling Oil & Gas Co.'s No. 2-A W. N. Brightwell, pinched through tubing, per day	72
Turman Oil Co.'s No. 5-B W. J. Brightwell, pinched through tubing, per day	72
Weaver-Crim Corp.'s No. 1 M. E. Peterson, through 1-in. tubing choke	90
Carroll & McIntyre's No. 1 G. A. Dickerson, through 2-in. tubing choke (10 min.)	5
Central Oil Corp.'s No. 1 E. B. Alford, through 2-in. tubing choke	80
E. L. Chapman's No. 2-B Finney, through open tubing	50
Jim Cloud's No. 3 Samp Stone, through open tubing (½ hr.)	60
Barney Cockburn's No. 2 Nathan Gree, through open tubing (½ hr.)	75
Combined Oil Interest's No. 6 G. W. Eaton, through open tubing	160
Gulf Prod. Co.'s No. 2 C. F. O'Quinn, through ⅝-in. tubing choke	77
Gulf Prod. Co.'s No. 2 G. W. Shaw, through ⅝-in. tubing choke	75
Gulf Prod. Co.'s No. 3 Samp Stone, through ⅝-in. tubing choke	70
Gulf Prod. Co.'s No. 8 G. G. Turner, through ⅝-in. tubing choke	75
Humble Oil & Ref. Co.'s No. 4 Charles Pilgree, through ⅝-in. tubing choke (½ hr.)	41
Humble Oil & Ref. Co.'s No. 3 J. J. Pitner, through ⅝-in. tubing choke (½ hr.)	49
Humble Oil & Ref. Co.'s No. 8 W. L. Price, through ⅝-in. tubing choke..	58
Humble Oil & Ref. Co.'s No. 1-C R. E. L. Silvey, through ⅝-in. tubing choke (½ hr.)	57
H. L. Hunt, tr.'s No. 3 A. B. Wooley, through open tubing	35
Lion Oil & Ref. Co.'s No. 7-B Brooks, through open tubing	60
Mose & Urschel's No. 1 H. Griffin, through ⅝-in. tubing choke	15
I. P. O'Neal's No. 2 W. O. Alford, through ⅝-in. tubing choke (¼ hr.)	45
Pilot Oil Co.'s No. 4 Finney, through open tubing	48

Sinclair Oil & Gas Co.'s No. 1 J. W. Ashby, through open tubing ..... gas
Standard Pipe & Supply Co.'s No. 3 J. Bell, through open tubing (⅛ hr.) 100
Venable-Reese and McClanahan's No. 2 J. W. Flanagan, through open tubing (20 min.) 80
Bay Oil Corp.'s No. 3 W. P. Moore, through 3-in. tubing choke 50
Mills Bennett's No. 8 Brightwell, through pinched tubing, per day 71
Cordova Union Oil & Gas Co.'s No. 1-B C. O. Christian, through pinched tubing, per day 71
Everts Drlg. Co.'s No. 4 C. O. Christian, through pinched tubing, per day ... 71
Cosby Nelson and Crole's No. 1 D. Wade, through pinched tubing, per day ... 71
Great Eastern Oil Co.'s No. 1 C. O. Christian, through pinched tubing, per day 71
Gulf Prod. Co.'s No. 9 W. Florence, through ¾-in. tubing choke 70
Gulf Prod. Co.'s No. 4 Russell, through ¾-in. tubing choke 88
Iotex Oil Co.'s No. 1 R. H. Beall, through pinched tubing, per day ... 71
Republic Prod. Co.'s No. 3 Scroggins, through pinched tubing, per day ... 71
Stanolind Oil & Gas Co.'s No. 5 J. S. Powers, through pinched tubing ... 121
Berry & Lewis' No. 2 Deason ..... abd
Blackwell Oil & Gas Co.'s No. 6 Samp Stone, through open tubing (⅛ hr.) 30
British American's No. 6 J. D. Stone, through open casing and tubing (10 min.) 61
Conservative Oil Co.'s No. 7 Lizzie Harmon, through 1-in. tubing choke... 180
C. A. Everts' No. 1 Cole, through open tubing 125
Golding & Murchison's No. 7 Kinney, through open tubing 90
Goodgame & Eby's No. 1 W. W. Holland, through pinched tubing 120
Gulf Prod. Co.'s No. 1 A. H. Rayford, through ¾-in. tubing choke 55
Gulf Prod. Co.'s No. 2-A A. H. Rayford, through ¾-in. tubing choke... 75
Humble Oil & Ref. Co.'s No. 9 W. L. Price, through ¾-in. tubing choke (⅛ hr.) 40
Humble Oil & Ref. Co.'s No. 5-A R. E. L. Silvey, through ¾-in. tubing choke (⅛ hr.) 50
Humble Oil & Ref. Co.'s No. 5 A. L. Walker, through ¾-in. tubing choke (⅛ hr.) 41
Humble Oil & Ref. Co.'s No. 4 Mattie Wooster, through ¾-in. tubing choke (⅛ hr.) 41
H. L. Hunt's No. 4-C Fair, through pinched tubing, per day 72
H. L. Hunt's No. 4-A Maxwell, through pinched tubing, per day 72
Magnolia Pet. Co.'s No. 2 S. W. Moore, through tubing (5 min.) 49
Mid-Kansas Oil & Gas Co.'s No. 1 Jim Lunsford, through tubing, based on ¾-hr. gauge 172
Mid-Kansas Oil & Gas Co.'s No. 1 George W. Moore, through open tubing (¼ hr.) 145
Sinclair Oil & Gas Co.'s No. 17 Kinney, through open tubing (¼ hr.) 45
Sinclair Oil & Gas Co.'s No. 1 D. Ledbetter, through open tubing (¼ hr.) 45
Stewart & Duffy's No. 1 Lawn, through 1-in. tubing choke (¼ hr.) 12
Tidal Oil Co.'s No. 7 Pinkston, through open tubing (10 min.) 21
Tulsa Oil Co.'s No. 2 J. E. Wheelis, through open tubing 120
Cordova Union Oil & Gas Co.'s No. 8 J. S. Bean, through pinched tubing, per day 71
Darby Pet. Co.'s No. 5-B C. O. Christian, through pinched tubing, per day 71
Empire Gas & Fuel Oil Co.'s No. 6 C. O. Christian, through pinched tubing, per day 71
Humble Oil & Ref. Co.'s No. 13-T S. S. Laird, through 1¼-in. tubing choke 27
Humble Oil & Ref. Co.'s No. 2 J. T. Robertson, through ¾-in. tubing choke (⅛ hr.) 40
Humble Oil & Ref. Co.'s No. 4-B Henry Sexton, through ¾-in. tubing choke 54
Humble Oil & Ref. Co.'s No. 2-C Henry Sexton, through ¾-in. tubing choke (⅛ hr.) 42
S. S. Laird Oil Co.'s No. 4 J. N. Peterson, through ¾-in. tubing choke ... 176
Magnolia Pet. Co.'s No. 3 Bradbury, through ¾-in. tubing choke (5 min.) 42
Shell Pet. Corp.'s No. 2 T. H. Gill, through tapered tubing (¼ hr.)..... 15
Jackson's No. 1 W. G. Williamson, through pinched tubing, per day ... 71
Tidal Oil Co.'s No. 7 W. P. Moore, through open 2-in. tubing choke (¼ hr.) 32
Ward Oil Co.'s No. 4 J. R. Bealle, through pinched tubing, per day ... 71
Jim Cloud's No. 3 W. F. Neal, through open tubing (10 min.) 25
R. W. Fair and C. L. Thompson's No. 1 W. E. Wylie, through open tubing.. 40
Gulf Prod. Co.'s No. 2-D Mayfield, through ¾-in. tubing choke 75
Humble Oil & Ref. Co.'s No. 3 Sol Dennis, through ¾-in. tubing choke (⅛ hr.) 41
Humble Oil & Ref. Co.'s No. 4-D R. E. L. Silvey, through ¾-in. tubing choke (⅛ hr.) 43
Humble Oil & Ref. Co.'s No. 8 J. W. Turner, through ¾-in. tubing choke (⅛ hr.) 46
H. L. Hunt's No. 3 W. P. Moore, through open tubing (¼ hr.) 50
McLester Drlg. Co.'s No. 1 J. Johnson, through open tubing (¼ hr.) 30
Mid-Kansas Oil & Gas Co.'s No. 5 J. F. Mason, through open tubing (¼-hr. gauge) 160
Mills Bennett's No. 3 L. J. Pinkston, through open tubing 80
George L. Pace's No. 1 E. B. Alford, through open tubing 50
Pansy Oil Co.'s No. 1 E. B. Alford, through 2-in. tubing choke 75
W. C. Snyder et al's No. 1 Stewart, through open tubing (¼ hr.) 25
Spansco Oil Co.'s No. 1 J. R. Alford, through open tubing 75
Staley-Wynne's No. 1 School Lot, through open tubing 67
The Texas Company's No. 2 Price, through ¾-in. tubing choke 100
Venable & McClanahan's No. 7 J. A. Bridwell, through open tubing (25 min.) 72
Gulf Prod. Co.'s No. 10 Florence, through ¾-in. tubing choke 75
Gulf Prod. Co.'s No. 2 Sexton, through ¾-in. tubing choke 65
Humble Oil & Ref. Co.'s No. 3-C Henry Sexton, through ¾-in. tubing choke (⅛ hr.) 49
Louisiana Oil & Ref. Co.'s No. 2 W. M. Jernigan, through open tubing (½ hr.) 75
Shell Pet. Corp.'s No. 2 T. H. Gill, through tapered tubing (½ hr.)..... 15
Sinclair-Prairie Oil Co.'s No. 2-B Major Kennedy, through open 2-in. tubing choke 54
Snowden & McSweeney's No. 8 Laird, through 1½-in. tubing choke 150
Wheelock & Collins' No. 9 Dick Wells, through open 2-in. tubing (12 hrs.).. 65
British American's No. 3 Murphy, through open casing (¼ hr.) 204
E. L. Chapman's No. 2 A. Johnson, through 1-in. tubing choke (35 min.) 72
Golding & Murchison's No. 2 Joe Lee, through pinched tubing, per day ... 72
Great Eastern Oil Co.'s No. 2 E. B. Alford, through open tubing 72
Gulf Prod. Co.'s No. 9 Turner, through ¾-in. tubing 72
Humble Oil & Ref. Co.'s No. 5 Pilgreen, through ¾-in. tubing choke 59
H. L. Hunt's No. 4 W. P. Moore, through open tubing (⅛ hr.) 50
H. L. Hunt's No. 3 R. J. Vinson, through open tubing (¼ hr.) 15
H. L. Hunt's No. 3-A Smith-Wilson, through open tubing (⅛ hr.) 55
Oscar Kemp and B. Fisher's No. 1 William et al ..... abd
Kirby Pet. Co.'s No. 4 Joe Williams, through open tubing 142
Lyons et al's No. 2 Arnold, through open tubing 45
Mid-Kansas Oil & Gas Co.'s No. 1 D. Ledbetter, through open tubing 160
Mid-Kansas Oil & Gas Co.'s No. 11 E. E. Moores, through open tubing 60
J. P. Berry et al's No. 1 H. P. Everett, through open 2-in. tubing (¼ hr.).. 30
L. H. Pritchard's No. 1 Mitte Giles, through open tubing 55
Sinclair-Prairie Oil Co.'s No. 1 W. T. Grissom, through open tubing (¼ hr.) 40
Sinclair-Prairie Oil Co.'s No. 13 Kinney, through open tubing (½ hr.) 75
Sinclair-Prairie Oil Co.'s No. 22 Kinney, through open tubing (⅛ hr.) 71
Sinclair-Prairie Oil Co.'s No. 5-B Mayfield, through open tubing (¼ hr.).. 45
J. E. Stone Lumber Co.'s No. 1 School Lot, through open tubing on 2-in. lead (¼-hr. gauge) 200
Trico Oil Co.'s No. 1 Pinkston, through ¾-in. tubing choke (14 min.) 20
Turman Oil Co.'s No. 5 Robert Dark ... abd
Ward Oil Co.'s No. 10 Thrash, through open tubing 95

Wells completed 131
Initial production 8903
Abandoned wells 3
Gas wells 1

SMITH COUNTY

	1-hr. gauge
W. B. Hinton's No. 2 H. Mayfield, through ¾-in. tubing choke	75
McCulloch et al's No. 1 Methodist Church, through open tubing (¼ hr.)	40
Magnolia Pet. Co.'s No. 6 Roy Loosier, through open tubing (5 min.)	47
Big Indian Oil Co.'s No. 5 Wolford, through open tubing (¼ hr.)	60
Deaner & Reynolds' No. 1 J. B. Wilson, through open tubing (¼ hr.)	45
Johnson & Owens' No. 2 Jackson ...	abd
Hamp Florence's No. 1 S. S. Cooke, through open tubing	35
Nash & Bloxom's No. 1 Frank Cole, through open tubing (½ hr.)	80
Pinegrove Oil Co.'s No. 2 S. S. Cooke, through open tubing (½ hr.)	50
Sinclair Oil & Gas Co.'s No. 11-A Jarvis, through open tubing (¼ hr.) ..	40
Sinclair Oil & Gas Co.'s No. 6-C Jarvis, through open tubing	50
Sinclair Oil & Gas Co.'s No. 11 Dora Wright, through 1-in. tubing choke (¼ hr.)	60
Sun Oil Co.'s No. 3 J. D. Henson, through tapered tubing	22
Sun Oil Co.'s No. 3-B H. A. Pace, through open tubing (½ hr.)	99
Sun Oil Co.'s No. 2-B A. V. Ritch, through tapered tubing	50
The Texas Company's No. 1-B Jarvis, through ¾-in. tubing choke and 2-in. tubing choke	74
Acme Oil Co.'s No. 1 Horton	abd
British American's No. 1 M. L. Thompson, through pinched tubing	72
H. L. Hunt's No. 3-B R. W. Fair, through open 2-in. tubing	180
McMahon-Moore and McCulloch's No. 2 S. S. Cooke, through ¾-in. tubing...	7
Rasmussen et al's No. 1 S. S. Cooke...	abd
Sinclair-Prairie Oil Co.'s No. 8-A Jarvis, through open tubing (¼ hr.)....	40
Sun Oil Co.'s No. 2-A A. V. Ritch, through open tubing	96
Texarkansas Oil Co.'s No. 2 T. O. Wright, through ¾-in. tubing choke (¼ hr.)	47
Weaver-Crim Oil Corp.'s No. 1 Stone or Lee, through open tubing (⅛ hr.)...	65
W. B. Hinton's No. 3 Mayfield, through ¾-in. tubing choke	80
Mid-Kansas Oil & Gas Co.'s No. 6 M. L. Thompson, through open tubing	150
Sinclair-Prairie Oil Co.'s No. 12-A Jarvis, through open tubing (⅛ hr.)...	60
Sinclair-Prairie Oil Co.'s No. 8-C Jarvis, through open tubing (⅛ hr.)...	60
Sinclair-Prairie Oil Co.'s No. 8-A Jarvis, through open tubing (¼ hr.)...	60
Sinclair-Prairie Oil Co.'s No. 10-A Mayfield, through open tubing (⅛ hr.)..	45
Sinclair-Prairie Oil Co.'s No. 14-A Mayfield, through open tubing (¼ hr.)..	60
Sinclair-Prairie Oil Co.'s No. 15-A Mayfield, through open tubing (¼ hr.)..	78
Sinclair-Prairie Oil Co.'s No. 1 E. E. Moore, through open tubing (¼ hr.)..	85
Sinclair-Prairie Oil Co.'s No. 3 Amanda Wiley, through open tubing (¼ hr.)..	48
Sinclair-Prairie Oil Co.'s No. 4 Bunch Wilson, through open tubing (¼ hr.)	45
Sun Oil Co.'s No. 4 J. A. Lane, through tapered tubing	60
Zion Oil Co.'s No. 1 Sartin, through open tubing (¼ hr.)	37

Wells completed 38
Initial production 2224
Abandoned wells 3

UPSHUR COUNTY

	1-hr. gauge
Wadley & Evans' No. 1 Oliver.....	abd
Conservative Oil Co.'s No. 5 O. M. Victory, through open tubing (¼ hr.) .	55
Barkley & Lincoln's No. 2 T. B. Webb, through 1-in. tubing choke (14 min.)	27
Clarkston et al's No. 3 E. O'Byrne, through 1-in. tubing choke	80
Danciger Oil & Ref. Co.'s No. 2 J. N. Taylor, through 1-in. tubing choke (¼ hr.)	31
Galves Oil Co.'s No. 3 W. W. Holland, through 1-in. tubing choke (¼ hr.)	70
Humble Oil & Ref. Co.'s No. 2-B O'Byrne, through ¾-in. tubing choke (¼ hr.)	15
Humble Oil & Ref. Co.'s No. 1-D E. O'Byrne, by heads, per day	70
Perrin & Fell's No. 2 C. C. Landers, through 1-in. tubing choke (9 min.)	15
Sun Oil Co.'s No. 4 J. Hargroves, through tapered tubing	36
Sun Oil Co.'s No. 3 A. J. Watkins, through tapered tubing	36
Mudge Oil Co.'s No. 4-A Free, through 1-in. tubing choke (20 min.)	40
Mudge Oil Co.'s No. 5-A Free, through various chokes (24 hrs.)	71
Rajo Oil Co.'s No. 5 J. K. Edwards, through open tubing (¼ hr.)	40
Sabina Oil Co.'s No. 1-C T. M. Collins,	
Sabine Oil Co.'s No. 1-C T. M. Collins, through 1-in. tubing choke	105
Saturn Oil Co.'s No. 1 W. F. Smith...	abd
Simms and Stanolind Oil & Gas Co.'s No. 4-B J. J. Flewellen, through open tubing (45 min.)	70
Atlantic Oil & Prod. Co.'s No. 5 D. A. Porter, through tapered tubing	14
Humble Oil & Ref. Co.'s No. 14 J. K. Edwards, through ¾-in. tubing choke	27
Humble Oil & Ref. Co.'s No. 2 A. J. Watkins, through ¾-in. tubing choke	51
Lester et al's No. 1 J. Jones, through various chokes	67
Mudge Oil Co.'s No. 6-A J. W. Free, through various chokes	67
Shano Oil Co.'s No. 2 Doby Lodin, through tapered tuting	25
Sun Oil Co.'s No. 2 J. T. Lodin, through tapered tubing	25
Sun Oil Co.'s No. 3 J. T. Lodin, through tapered tubing	50

Wells completed 25
Initial production 1087
Abandoned wells 2

VAN ZANDT COUNTY

	1-hr. gauge
Pure Oil Co.'s No. 2 A. E. Humphrey, through 11/16-in. tubing choke	40
Pure Oil Co.'s No. 7 M. E. Clark, through tubing	249
Pure Oil Co.'s No. 1 J. F. McPherson, through 11/16-in. tubing	20
Pure Oil Co.'s No. 4 L. A. Smith, through 11/16-in. tubing choke	450
Pure Oil Co.'s No. 8 M. E. Clark, through 11/16-in. tubing choke	100
Pure Oil Co.'s No. 2 P. E. Neill, through 11/16-in. tubing choke	104
Pure Oil Co.'s No. 1 Clark	abd
Pure Oil Co.'s No. 2 Brawner	abd
Pure Oil Co.'s No. 4 J. J. Murphree....	abd

Wells completed 9
Initial production 963
Abandoned wells 3

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Cowley	7	1,275	1	0
Ellsworth	3	4,862	0	0
Greenwood	10	384	5	0
McPherson	11	5,772	1	0
Rice	2	145	1	0
Reno	1	0	0	1
Russell	1	0	1	0
Sedgwick	5	789	2	0
Stafford	2	1,265	0	0
Sumner	1	0	1	0
Total April	43	14,556	12	1
Total March	30	7,522	6	2
Difference	13	7,034	6	1

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Barton	0	1	1
Bourbon	0	1	1
Butler	1	2	3
Chase	1	1	2
Clark	0	1	1
Coffey	0	2	2
Cowley	1	10	11
Dickinson	0	1	1
Douglass	0	1	1
Edwards	0	1	1
Ellsworth	0	12	12
Finney	0	1	1
Ford	0	2	2
Greenwood	2	12	14
Graham	0	1	1
Harvey	1	4	5
Kingman	0	2	2
McPherson	8	34	42
Marion	0	1	1
Morris	1	4	5
Morton	0	1	1
Osage	0	1	1
Phillips	0	1	1
Pratt	1	0	1
Rawlins	0	1	1
Reno	3	4	7
Rice	1	3	4
Rush	0	2	2
Russell	2	1	3
Saline	0	1	1
Sedgwick	2	10	12
Sheridan	0	1	1
Stevens	0	1	1
Sumner	1	2	3
Trego	0	1	1
Washington	0	1	1
Woodson	0	2	2
Total April	25	127	152
Total March	42	112	154
Difference	17	15	2

WELLS COMPLETED

COWLEY COUNTY

22-32-4 Moncrief, Roth & Faurot 3 300
Evans, McKnabb & Mission Oil Co. 1 100
Schul, Roth & Faurot 1 300
College, Roth & Faurot 1 300
28-32-4 Wallace, Fine et al 1 ..... dry
22-32-4 Cavitt, Wakefield et al 1 250
Hutto, McKnabb et al 2 125

Wells completed 7
Production 1375
Dry 1

ELLSWORTH COUNTY

1-17-10w Stratman, Aylward et al 2..1918
12-17-10w Stratman, Derb yOil Co. 1 .. 974
1-17-10w Stratman, Robertson et al 2 1970

Wells completed 3
Production 4862

GREENWOOD COUNTY

6-24-12 Smith, Gore et al 2 ..... dry
8-24-12 Wilson, Mathews & Rex 1 120
36-24- 9 Nixon, McPherson O. & G. 1.. dry
16-28-12 Aispaugh, Wilson et al 1 .... dry
15-22-13 Povemire, Aikman & Braden et al 1 ..... dry
28-23-11 Beal, McGinnis et al 1 ..... dry
Beal, Harwood et al 2 30
35-23-11 Hillman, Empire O. & R. Co. et al 4 80
33-23-11 Carson, Harwood Oil Co. et al 2 100
16-24-12 Johnson, Shull Drlg. Co. 2 18

Wells completed 10
Production 348
Dry 5

McPHERSON COUNTY

12-19-2w Russell, Helmerick, Payne and Shell Pet. Corp. ..... dry
26-19-2w Unruh, Derby Oil Co. and The Texas Company 2 535
10-19-2w Robinson, Rush Oil Co. et al 2 145
24-19-2w Hale, Lassen et al 2 1240
35-19-2w Flook, P. J. Breslin et al 1 .. 255
30-19-1w Anderson, Phillips Pet. Co. and Shell Pet. Corp. 4 896
24-19-2w Gratton, Youker et al 2 1716
35-19-3w Helstrom, Shell Pet. Corp. 1.. 225
10-19-2w Robinson, Rush Oil Co. et al 1 110
7-20-1w Meeks, Washoma and Shell Pet. Corp. 2 85
27-20-2w Stucky, Slick, Pryor & Lockhart 1 565

Wells completed 11
Production 5772
Dry 1

RICE COUNTY

7-20-10w Bayer, Magnolia Pet. Co. 1.. dry
31-19-10w Steckell, Gypsy Oil Co. 1 ... 145

Wells completed 2
Production 145
Dry 1

RENO COUNTY

26-23-4w Goering, Olsen Drlg. Co. and Shell Pet. Corp. 1 ..... gas

Wells completed 1
Gas 1
Gas production 86,540,000

RUSSELL COUNTY

3-14-11w Pasek, Palmer and Deep Rock Oil Corp. 1 ..... dry

Wells completed 1
Dry 1

SEDGWICK COUNTY

27-27-1e Fee, Wibble Ice & Cold Storage Co. 1 ..... dry
19-27-2 Trustee, Fisher & Lauck 1 ... 600
12-26-1w Lamb, Continental Oil Co. and Gypsy Oil Co. 1 126
1-26-1w Wilson, Skelly Oil Co. and Davis 9 ..... dry
15-25-1e Pinsen, Rosenthal et al 1 65

Wells completed 5
Production 789
Dry 2

STAFFORD COUNTY

31-22-11w Allen, Mid-West Ref. Co. et al 29 1065
1-23-12w Figgers, Mid-West Ref. Co. et al 11 200

Wells completed 2
Production 1265

SUMNER COUNTY

16-35-3w Williams, Gypsy Oil Co. 1 ... dry

Wells completed 1
Dry 1

SOUTHWEST TEXAS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Pettus	3	320	1	0	0	2	2
Eckert	6	47	0	0	0	4	4
Cooksey	4	79	0	0	0	0	0
Bruner	1	18	0	0	1	0	1
Schimmell	1	30	0	0	0	1	1
Gov. Wells	1	600	0	0	1	0	1
Darst Creek	1	600	0	0	0	1	1
Saxet	2	200	1	0	1	3	4
Los Olmos	16	373	7	0	3	9	12
Escobas	10	290	6	0	3	4	7
Miscellaneous	32	5	29	2	15	89	104
Total Apr.	77	2,562	44	2	25	113	138
Total Mar.	61	2,858	31	4	25	106	131
Difference	16	296	13	2	0	7	7

WELLS COMPLETED

PETTUS POOL—BEE COUNTY

Ray, Slick-Seeligson 5 120
Portis, Houston Oil Co. 4 ..... abd
Mauldin, Henderson Coquat 1 200

ECKERT POOL—BEXAR COUNTY

Strum, W. K. Oil Co. 2 8
Strum, W. K. Oil Co. 1 7
Brehm, F. H. Eckert & Son 8 8
Halbadier, W. R. Swearingen 8 10
Strunk, W. K. Oil Co. 3 7
Sandemer, F. H. Eckert & Son 5 7

COOKSEY POOL—BEXAR COUNTY

Cooksey, Chiquita Oil Co. 3 2
Kosub, Chiquita Oil Co. 1 35
Kosub, Chiquita Oil Co. 2 2
Piniazek, Chiquita Oil Co. 1 40

BRUNER POOL—CALDWELL COUNTY

Malone, Joe Bruner 1 18

SCHIMMELL POOL—BASTROP COUNTY

Trigg, Schimmel & Batts 4 30

GOVERNMENT WELLS POOL—DUVAL COUNTY

White, Humble O. & R. Co. 3 600

DARST CREEK POOL—GUADALUPE COUNTY

Denman, Humble O. & R. Co. C-4 600

SAXET POOL—NUECES COUNTY

McGregor, Houston Oil Co. 1 200
Dunn, Saxet Oil Co. 6 ..... abd

LOS OLMOS POOL—STARR COUNTY

Bass, J. A. Tarver 3 25
Sullivan, Tarver & Nance 1 ..... abd
Ivey, San Marcos Oil & Gas Co. 7 10
Ivey, San Marcos Oil & Gas Co. 8 10
Ivey, San Marcos Oil & Gas Co. 9 10
Kelsey Bass, Davis et al 3 20
Goodrich, R. R. Johnson 1 200
Kelsey Bass, Rio O. & G. Co. 1 ..... abd
Kusch, Quien Sabe O. & G. Co. 2 ..... abd
Kelsey Bass, Tarver & Nance 2 3
Kelsey Bass, Hooks & Weaver 5 20
Kelsey Bass, Sullivan & Clements 1 ..... abd
Kelsey Bass, Los Olmos O. & G. Co. 11 75
Kelsey Bass, H. H. Davis et al 4 ..... abd
Kelsey Bass, Los Olmos O. & G. Co. ..... abd
Seabury, R. N. Pursley 1 ..... abd

ESCOBAS POOL—ZAPATA COUNTY

Winch & Henne, F. H. Etheridge 2 ..... abd
Montemayor, S. R. C. Oil Co. D-6 ..... abd
Garsa, Trevino Oil Corp. 1 ..... abd
Bustamente, O. W. Killam 18 ..... abd
Garsa, D. M. Shaffer 1 ..... abd
Medina, O. W. Killam 5 100
Montemayor, Daniels & Hill 2 ..... abd
Trevino, Trevino Oil Corp. C-1 75
Montemayor, McGinley Corp.-A. E. Carr 1 15
Montemayor, Lobo Oil Co. 3 100

Wells completed 45
Production 2557
Gas production ..... none
Abandoned 15

MISCELLANEOUS COUNTIES

Bastrop County—
Powers, Sun Oil Co.-Humble O. & R. Co. 1 ..... abd

Bee County—
McFall, Alexander et al 1 ..... abd

Bexar County—
S. A. Land & Dev. Co., S. W. Blount 1 .. abd
Buck, Callahan Final Oil Co. 1 ..... abd

Bianco County—
Ludder, Lyles & Adams 1 ..... abd
McMillian, Hardy Sitton 1 ..... abd
Specht, Theo Hicks 1 ..... abd

Duval County—
Johnston, Seacord, Putman Evans et al 1 ..... gas
Parr, Wolcott & Rehmet 1 ..... abd

Guadalupe County—
Hoffman, Barnhill et al 1 ..... abd
Black, Tidal Oil Co. 1 ..... abd
Hamilton, Darst Oil Co. 1 ..... abd

Hidalgo County—
Hart, LaJoya Oil & Gas Co. 1 ..... abd
Fernandes, Dayle L. Smith 5 ..... abd

Kerr County—
Jeff Love, Evans & Gants 2 ..... abd

Live Oak County—
Sanger, Henderson Coquat 2 ..... abd
Handley, Cullen & West 1 ..... abd

Lee County—
Huckey, Chadwich et al 1 ..... abd
Dusmuke, Henderson & Holdin 1 ..... abd
Stoltz, C. B. Polk et al 1 ..... abd

Maverick County—
Bandera School Land, I. N. Boicourt 1 .. abd

McMullen County—
Hale, V. G. Schimmel 2 ..... abd

Milam County—
Hosea, Yeager et al 1 5

Nueces County—
King, Camp-Stanolind O. & G. Co. 1 .... gas

Refugio County—
St. John, Moody-Seagraves Corp. A-2 .... abd

Travis County—
Swedish, Fritz Fuchs 1 ..... abd

Webb County—
Ellison, W. R. Shankle 1 ..... abd
Brun, O. W. Killam 5 ..... abd
Laurel, Fansler, Peacock & Johnson 1 .... abd
Brunl, O. W. Killam 4 ..... abd

Williamson County—
Galler, G. B. Peterman 1 ..... abd
Lane, McNeil et al 1 ..... abd

Wells completed 32
Production 5
Gas production 80,000,000
Abandoned 29

WEST TEXAS FIELDS

Summary of Wells Completed

	Comp.	Prod.	Dry	Gas
Ector	1	0	0	1
Howard	1	0	1	0
Pecos	3	0	3	0
Reeves	1	0	1	0
Scurry	1	0	1	0
Tom Green	1	0	1	0
Upton	1	237	0	0
Ward	3	598	1	0
Winkler	1	0	1	0
Total April	13	835	9	1
Total March	13	1,377	6	0
Difference	0	542	3	1

Summary of Rigs and Wells Drilling

	Rigs	S.D.	Drig.	Ttl.
Crane	0	0	0	0
Ector	1	1	0	2
Fisher	2	1	4	7
Howard	2	1	6	9
Irion	1	1	1	3
Jones	4	1	1	6
Loving	2	5	8	15
Pecos	2	4	5	11
Reagan	1	1	4	6
Upton	0	0	3	3
Ward	4	9	12	25
Winkler	1	0	0	1
Miscellaneous Counties	2	20	12	34
Total April	22	44	56	122
Total March	26	40	39	105
Difference	4	4	17	17

WELLS COMPLETED

CULBERSON COUNTY

Harris & Haun, Harris & Haun 1 ..... abd

ECTOR COUNTY

E. F. Cowden, Weekley Oil Corp. et al 1 gas

HOWARD COUNTY

Otis Chalk, Otis Chalk 1 ..... dry

LOVING COUNTY

Jim Wheat, Stein & Bowers 1 ..... abd

PECOS COUNTY

J. H. Tippett (Humble), Corvette Oil Corp 6 ..... dry
W. A. Sanford (Shell), C. L. Dittman et al 1 ..... dry
J. H. Tippett (Humble), Corvette Oil Corp. 5 ..... dry

REEVES COUNTY

J. B. Ellis, May & Milton 1 ..... dry

SCURRY COUNTY

F. Kruse, Simon-Brock et al 1 ..... dry

TOM GREEN COUNTY

G. W. Lewis, G. W. Andrews 1 ..... dry

UPTON COUNTY

J. T. McElroy, Gulf Prod. Co. 96 237

WARD COUNTY

J. H. Boogher et al, Sudderth & Carey 1 dry
G. W. O'Brien et al, Gulf Prod. Co. 20.. 200
Hutchings Stock Assn., Tr-E, 10 398

Wells completed 3
Production 598
Dry 1

WINKLER COUNTY

S. M. Halley, Sid Richardson et al 1 .. dry

NORTH CENTRAL TEXAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Archer	26	2,011	12	0
Brown	3	7	2	0
Callahan	3	0	3	0
Coleman	1	290	0	0
Cooke	1	20	0	0
Eastland	4	0	2	2
Grayson	2	0	2	0
Jack	3	0	3	0
McCulloch	1	0	1	0
Montague	2	125	1	0
Palo Pinto	1	0	0	1
Shackelford	4	33	0	2
Somervell	1	0	1	0
Stephens	1	0	1	0
Throckmorton	3	10	2	0
Wichita	6	88	1	0
Young	39	144	31	0
Total April	101	2,728	62	5
Total March	57	984	29	8
Difference	44	1,744	33	3

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Dig.	Ttl.
Archer	11	5	29	45
Brown	0	2	7	9
Callahan	2	1	2	5
Coleman	2	4	7	13
Cooke	3	1	2	6
Clay	0	0	0	0
Eastland	1	1	4	6
Erath	0	1	0	1
Jack	1	0	1	2
Palo Pinto	2	5	9	16
Shackelford	5	2	3	10
Stephens	0	2	2	4
Throckmorton	1	1	0	2
Wichita	0	0	9	9
Wilbarger	0	0	2	2
Young	15	2	26	43
Miscellaneous counties	5	8	9	22
Total April	48	35	112	195
Total March	47	56	72	175
Difference	1	21	40	20

WELLS COMPLETED

ARCHER COUNTY

Oil Investment Co., Bridwell Oil Co. 22.. 95
J. C. Thomas, C. E. Jones 1 20
B. T. McCarty, Fain-McGaha Oil Corp. 1 dry
J. S. Walsh, Gilland & Rosser 2 ..... dry
Falls County School Land-D, Perkins & Cullum 2 57
Falls County School Land-D, Perkins & Cullum 3 58
W. J. Logan, Perkins & Cullum 1 ..... dry
J. T. Richardson-B, Petroleum Prod. Co. 1 ..... dry
F. W. Young, Underwood Drlg. Co. 1.. dry
J. S. Bridwell, Beard Hammond & Steel Drlg. Co. 1 ..... dry
Wilson No. 1, Deep Oil Dev. Co. and Lindsey 2 790
Wilson No. 1, Deep Oil Dev. Co. and Lindsey 3 740
Churchwell, Easter & Reynolds 2 ..... dry
Plowman et al, H. H. Fraser 1 ..... dry
Perkins, Holbrock & Woods 1 ..... dry
Thomas, C. E. Jones 2 16
Hawley, Shappell Oil Co. 1 ..... dry
W. J. Logan, L. T. Burns 1 5
Logan-A, L. T. Burns 3 10
Abercrombie, H. C. Dean 1 20
Williams, Kimmell & Woofter 8 ..... location temp. abd
Williams, Kimmell & Woofter 9 ..... location temp. abd
Williams, Kimmell & Woofter 10 ..... location temp. abd
F. C. Green-B, W. E. Maxson, Jr., 12 .. 50
Green, George L. Pace 3 75
Abercrombie-A, Perkins & Cullum 1 40
Richardson-C, Petroleum Prod. Co. 1 .. dry
F. C. Green, Schultz & Weaver 8 35
Ward, Underwood Drlg. Co. 1 ..... dry

Wells completed 26
Production 2011
Dry 12

BROWN COUNTY

H. Byler, Charter Oil Co. 11 7
J. M. Fields, W. Farrish et al 1 ..... dry
R. Lynch, Sherwood B. Owens 1 ..... dry
L. W. McDonald, Van Bibber & Trout 4 ..... location temp. abd
Whitehead, Dallas Brown Co. 1 (recompleted) 2

Wells completed 3
Production 7
Dry 2

CALLAHAN COUNTY

I. N. Jackson, Beams et al 2-C ..... dry
O. E. Radford, Guffy & Perry 3 ..... Loc. abd
Slaughter, Hart Brothers 1 ..... dry
Terry, The Texas Company 6 ..... dry

Wells completed 7
Dry 3

COLEMAN COUNTY

F. Golson, Barnsdall Oil Co. 3 290

COOKE COUNTY

Jacoba, Danciger O. & R. Co. 1 20

EASTLAND COUNTY

H. Jess Blackwell, H. A. Bartrug 1 .... gas
E. J. Ward, Lone Star Gas Co. 1 ..... gas
J. H. Groves, Warner-Quinlan Co. 1 ... dry
City of Eastland, Wilkins et al 1 ..... dry

Wells completed 4
Dry 2
Gas 2
Gas production 10,180,000

GRAYSON COUNTY

E. C. Kimbrough, John Marshall 1 ..... dry
H. M. Curtis, John Marshall 1 ..... dry

JACK COUNTY

Plemmons, R. J. Brown 1 ..... dry
Humphreys, Hughes & Quinlivan 1 ..... dry
Terrill, Texas Plains Oil Co. 1 ..... dry

McCULLOCH COUNTY

Walker, Bryant et al 1 ..... dry

MONTAGUE COUNTY

J. H. Brown, Bridwell Oil Co. 2 125
H. C. McGaughy, O. V. Beck & Co. 1.. dry

PALO PINTO COUNTY

Allen, Palo Pinto O. & G. Co. 1 ..... gas
Ringo, Gordon et al 1 (recompletion) .. dry

Gas production 7,100,000

SHACKELFORD COUNTY

E. E. Whitney, Loggie et al 1-A ..... gas
Clark, Worth Pet. Co. 5 8
Clark, Worth Pet. Co. 6 25
W. P. Newell, J. S. Sedwick and Wiley Brothers 1 ..... gas

Wells completed 4
Production 33
Gas 2
Gas production 8,000,000

SOMERVELL COUNTY

Mrs. G. W. Sandlin, E. P. Knott et al 1 dry

STEPHENS COUNTY

J. Black, Hickman, Hicks & Black 1.. dry

THROCKMORTON COUNTY

Lee Tuton, McCarter et al 1 10
Jones, McCarter et al 1 ..... dry
Reynolds, H. E. Williams 1 ..... dry

Wells completed 3
Production 10
Dry 2
Gas production 250,000

WICHITA COUNTY

Overall, F. C. Baldwin 4 23
Bickley, R. R. Clark et al 15 38
Waggoner, G. W. Cooper 17 ..... dry
Waggoner, G. W. Cooper 18 5
Roller, Reno & Goldsmith 6 7
Waggoner, G. W. Cooper 16 15

Wells completed 6
Production 88
Dry 1

YOUNG COUNTY

G. M. Jones, C. E. Beavers, Jr. 1 ..... dry
H. K. Weems, N. B. Crenshaw 1 ..... dry
C. W. Johnson-A, J. F. Cunningham 8 .. dry
G. P. Stewart, J. T. Gaffney and N. A. Meyer 1 ..... dry
J. P. Logan, Jno. Harville 2 ..... dry
E. H. Morrison, W. S. Hawkins 1 ..... dry
G. W. Terrell estate, J. W. Huffman et al 1 ..... dry
C. W. Johnson, Kleiner-Hill & West 2.. 5
W. S. Husted, W. N. Maer 1 ..... dry
C. D. Leberman, D. M. Ross 1 ..... dry
W. S. Purselly, Rubsam & Gatewood 1.. dry
S. B. Jeffery, Stanley & Krause 1 ..... dry
E. L. Baldwin, United Prod. Co. 1 ..... dry
F. E. Brown, C. C. Williams 1 ..... dry
Jeffery-G, Floyd, Ard 1 ..... dry
Brown, R. S. Bolling 1 15
Brown, R. S. Bolling 2 ..... dry
Gardner, R. S. Bolling 1 ..... dry
Fay Clarke, E. P. Brown 1 ..... dry
Snider, Cable Oil Co. 23 ..... dry
Barrett, J. D. Carpenter 10 ..... dry
Hill, Cavin & Lowry 1 ..... dry
Dunagan, Cooper Mitchell et al 4 10
Newman, R. S. Dean, Jr. 1 ..... dry
Finch, F H E Oil Co. 3 ..... dry
Logan, Jno. Harville 1 8
Carpenter, Thos. Holcombe 1 16
Jones, L. E. Hultz et al 1 ..... dry
Hunt, E. W. Hunt 1 ..... dry
Routon, W. N. Maer 1 ..... dry
Williams, Marshall Peery Snoddy 1 .... dry
Beiknap, W. A. and C. A. Stickey 1 .... dry
Hardy, Terrell & Willis 1 ..... dry
Morris, United Prod. Co. 1 ..... dry
Robinson, Wooten & Reed 1 40
Josh Swain, Wooten & Reed 2 38
McLaren-D, Christie Bros. 1 12
Williams-A, L. A. Long et al 2 ..... dry
O. D. Lisle, Prairie P. & G. Co. 1 ..... dry
Kisinger, W. S. Randell 2 ..... gas

Completions 39
Production 144
Dry holes 31
Gas production 15,500,000

PANHANDLE FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	2	202	0	1
Gray	6	2,822	0	0
Hutchinson	1	70	0	0
Total April	9	3,094	0	1
Total March	7	570	1	3
Difference	2	2,524	1	2

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Dig.	Ttl.
Carson	2	1	2	6
Gray	6	6	11	23
Hutchinson	1	2	6	9
Moore	2	2	2	6
Wheeler	0	1	0	1
Miscellaneous counties	0	7	1	8
Total April	12	18	22	53
Total March	12	19	20	51
Difference	0	1	3	2

WELLS COMPLETED

CARSON COUNTY

Burnett-S, Texoma Natural Gas Co. 1 gas
B. F. Block, Continental Oil Co. 4 202
Cooper, H.A.M. Oil Co. 2 ..... location abd
Cooper, H.A.M. Oil Co. 3 ..... location abd

Wells completed 2
Production 202
Gas 1
Gas production 29,000,000

GRAY COUNTY

Wright, Danciger Oil & Ref. Co. 2 ... 1602
Pope, Prairie O. & G. Co. 1 90
H. Schafer, Skelly Oil Co. 25 350
Byrum, Danciger O. & R. Co. 3 250
Schafer (East), Skelly Oil Co. 8 280
Waggoner, Stanolind O. & G. Co. 2 250

Wells completed 6
Production 2822
Gas production 10,000,000

HUTCHINSON COUNTY

Johnson (Premier), Huber Pet. Co. 1.. 70

Gas production 4,000,000

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rigs	Drlg.	Ttl.
Avoylles	0	0	0	0	1	0	1
Bossier	0	0	0	0	0	1	1
Caddo	1	0	0	1	0	3	3
Caldwell	0	0	0	0	0	2	2
Catahoula	0	0	0	0	0	1	1
De Sota	0	0	0	0	1	5	6
Grant	0	0	0	0	1	1	2
Morehouse	0	0	0	0	0	1	1
Natchitoches	0	0	0	0	2	2	4
Ouachita	0	0	0	0	1	1	2
Red River	0	0	0	0	1	1	2
Richland	0	0	0	0	0	1	1
Sabine	11	2,230	7	0	29	26	55
Tensas	0	0	0	0	0	1	1
Union	1	0	0	1	2	1	3
Webster	0	0	0	0	0	1	1
Total Apr.	13	2,230	7	2	38	48	86
Total Mar.	23	570	13	5	34	41	75
Difference	10	1,660	6	3	4	7	11

*Gas production: Caddo, 12,000,000 feet; Union, 7,970,000 feet; total, 19,970,000 feet.

WELLS COMPLETED

CADDO PARISH

32-19-16 Hammock, Louana Oil & Gas Co. 1 ..... gas

Gas production 12,000,000

NATCHITOCHES PARISH

30-7- 9 Brown Lbr. Co., H. W. Perritt 2 abd

SABINE PARISH

11-7-11 Quayhaglen, Baird & Stone 1 .. 125
11-7-11 Petty, Baird Bros. 1 ..... dry
3-7-11 S. S. Martinez, Cortes Pet Co. 1-B 2000
1-7-11 Newton, Hawkins & Antoon 1.. dry
1-7-11 Byrd, Ben Merritt, Trus. 2 ..... dry
14-7-11 Clanan, E. F. Neely 2 30
34-7-13 Peterson, Root Ref. Co. 1 ..... dry
13-7-11 Williams, Rowe et al 1 ..... dry
12-7-11 La. Long Leaf Lbr. Co., H. H. Smith et al 2 75
7-7-10 Smith, J. E. Smitherman 1 ..... dry
2-7-13 Nulton, Stovall Drlg. Co. 3 ..... abd

13-7-11 Travis, C. H. Tuttle 1 ..... dry

Production 2330
Dry 7

UNION PARISH

17-20-4e Fee, Southern Carbon Co. 58... gas

Gas production 7,976,000

ARKANSAS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Ashley	0	0	0	0	0	1	1
Clay	0	0	0	0	0	1	1
Cleburne	0	0	0	0	0	1	1
Cleveland	0	0	0	0	1	0	1
Columbia	0	0	0	0	0	1	1
Crawford	0	0	0	0	1	0	1
Dallas	0	0	0	0	1	1	2
Drew	0	0	0	0	0	1	1
Hot Springs	0	0	0	0	0	1	1
Lawrence	0	0	0	0	1	0	1
Lincoln	0	0	0	0	0	1	1
Loanoke	1	0	1	0	0	0	0
Logan	0	0	0	0	0	1	1
Miller	0	0	0	0	0	3	3
Ouachita	0	0	0	0	0	2	2
Pike	0	0	0	0	0	2	2
Prairie	0	0	0	0	1	0	1
Scott	0	0	0	0	0	2	2
Sevier	0	0	0	0	0	1	1
St. Francis	0	0	0	0	0	1	1
Union	3	200	2	0	2	9	11
Van Buren	0	0	0	0	0	1	1
Washington	0	0	0	0	1	1	2
Yell	0	0	0	0	0	1	1
Total Apr.	4	200	3	0	3	32	40
Total Mar.	1	35	0	0	3	30	38
Difference	3	265	3	0	0	2	2

WELLS COMPLETED
LOANOKE COUNTY

13- 1- 3 Fletcher, Frank Melat et al 2 dry

UNION COUNTY

1-17-16 Haynie, Drillers Oil & Dev. 1. dry
21-19-16 Barnes, L. M. Hill et al 1 .... abd
33-16-14 Pardue, Sunby et al 2 ..... dry
3-18-13 Parker, Wilson & Mitchell 1 .. 300

MISSISSIPPI

Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rigs	Drlg.	Ttl.
Clarke	0	0	0	0	1	0	1
Hinds	2	0	0	2	1	2	3
Jasper	0	0	0	0	0	1	1
Lamar	0	0	0	0	0	1	1
Lowndes	0	0	0	0	1	0	1
Newton	0	0	0	0	0	1	1
Noxubee	0	0	0	0	0	1	1
Rankin	2	0	0	3	3	2	5
Scott	0	0	0	0	0	1	1
Sharkey	0	0	0	0	0	1	1
Warren	0	0	0	0	0	1	1
Total April	5	0	0	5	6	11	17
Total March	7	0	0	7	7	11	18
Difference	2	0	0	2	1	0	1

*Gas production, Hinds 81,872,000; Rankin 125,085,000; total 206,957,000 feet.

WELLS COMPLETED
HINDS COUNTY

26-6n-1e Pullen, James Alexander trus. 1 gas
35-6n-1e Fee, Belhaven College 1 ..... gas

Gas production 81,872,000

RANKIN COUNTY

18-5n-2e Valentour, Atkinson & Dyer 1. gas
6-5n-2e Rankinside Dev. Co., Baker et al 1 ..... gas
12-5n-1e Pate, Muse & Muse 1 ..... gas

Gas production 125,085,000

GULF COAST FIELDS

Summary of Field Operations
Texas

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl.
Barbers Hill	6	5,955	0	0	2	12	14
Blue Ridge	0	0	0	0	0	2	2
Damon Mound	1	0	1	0	0	1	1
Esperson	0	0	0	0	0	3	3
Fannett	0	0	0	0	0	2	2
Goose Creek	0	0	0	0	0	1	1
Hankamer	0	0	0	0	0	1	1
High Island	1	932	0	0	0	2	2
Hull	1	250	0	0	1	2	3
Humble	3	0	3	0	0	6	6
Liberty	0	0	0	0	0	1	1
Lost Lake	0	0	0	0	0	1	1
Manvel	1	1,200	0	0	0	0	0
Markham	2	0	2	0	1	2	3
Moss Bluff	1	0	1	0	0	1	1
Mykawa	1	280	0	0	0	1	1
Orange	0	0	0	0	0	1	1
Orchard	1	1,100	0	0	0	0	0
Pierce Jctn.	3	800	2	0	1	5	6
Port Neches	2	1,800	0	0	0	2	2
Rabbs Ridge	2	3,100	0	0	1	4	5
Refugio	5	205	3	1	0	7	7
Saratoga	3	33	0	0	0	1	1
Miscellaneous	10	0	9	1	4	31	35
Total Apr.	45	15,655	19	2	10	85	95
Total Mar.	36	7,982	14	0	8	69	77
Difference	9	7,673	5	2	2	19	21

LOUISIANA

Bayou Blue	0	0	0	0	0	1	1
Black Bayou	0	0	0	0	0	1	1
Choctaw	0	0	0	0	0	2	2
E. Hackberry	3	1,035	0	0	0	6	6
Old Hackberry	0	0	0	0	0	1	1
Edgerly	0	0	0	0	0	2	2
Iowa	0	0	0	0	0	2	2
Jennings	0	0	0	0	0	4	4
Lake Barre	1	2,700	0	0	0	2	2
Lake W'ah'g'n	0	0	0	0	0	1	1
Leesville	2	1,700	0	0	0	1	1
Lockport	1	0	1	0	0	0	0
Port Barre	2	2,130	0	0	0	0	0
Sulphur	2	2,500	1	0	0	3	3
Vinton	1	0	1	0	0	2	2
Miscellaneous	7	500	6	0	0	7	7
Total Apr.	19	19,585	9	0	0	35	35
Total Mar.	7	4,435	4	0	3	30	33
Difference	12	6,140	5	0	3	5	2
Total Gulf C.	64	24,226	28	2	10	123	133
Total March	43	12,407	18	0	11	99	110
Difference	21	13,813	10	2	1	24	23

WELLS COMPLETED
Texas
BARBERS HILL-CHAMBERS COUNTY

Tarbutton, Bashara Oil Co. 2 46
Wilburn, Gulf Prod. Co. 7 1200
Chambers, Sun Oil Co. 8 360
Kirby, Texas Gulf Prod. Co. 9-B..... 750
Kirby, Texas Gulf Prod. Co. 6-H 1700
Scott, Texas Gulf Prod. Co. 1 1870

Wells completed 6
Production 5955
Abandoned 0

DAMON MOUND—BRAZORIA COUNTY

Cave, The Texas Co. ..... abd

HIGH ISLAND—GALVESTON COUNTY

Cade, Yount Lee Oil Co. 26 932

HULL-LIBERTY COUNTY

Barrow, Eclipse Oil Co. 1 250

HUMBLE—HARRIS COUNTY

C. O. & G., Texas Co. fee, Burt et al 1.. abd
Bender, Sun Oil Co. 27 ..... abd

Wells completed 2
Abandoned 2

MANVEL—BRAZORIA COUNTY

Belcher, The Texas Co. 2 1200

MARKHAM—MATAGORDA COUNTY

Elkins, Claude Hamill et al 1 ..... abd
Hudson, L. P. Smith et al 2 ..... abd

Wells completed 2
Production 0
Abandoned 2

MOSS BLUFF—LIBERTY COUNTY

Sterling, Humble Oil & Ref. Co. 19 .... abd

MYKAWA—HARRIS COUNTY

Minnetex, Ed Flannigan et al 1 280

ORCHARD—FORT BEND COUNTY

Moore, Gulf Prod. Co. 32 1100

PIERCE JUNCTION—HARRIS COUNTY

Whitehead, Anderson & Plummer 4 ... abd
Cain, Gulf Prod. Co. 9 800
Settegast, Rio Bravo Oil Co. 8-B ..... abd

Wells completed 3
Production 800
Abandoned 2

PORT NECHES—ORANGE COUNTY

Kuhn, The Texas Co. 3 1500
Pork, The Texas Co. 3 300

Wells completed 2
Production 1800
Abandoned 0

RABBS RIDGE—FORT BEND COUNTY

George, Humble Oil & Ref. Co. and Gulf Prod. Co. 3 1800
Booth, Gulf Prod. Co. and Humble Oil & Ref. Co. 1 1300

Wells completed 2
Production 3100
Abandoned 0

REFUGIO—REFUGIO COUNTY

*Tom Heard, Houston Oil Co. 1 30
*Rose Lambert, Houston Oil Co. 2 ..... abd
Strauch, Larco Gas & Oil Co. 4 ..... abd
*O'Brien, Moody-Seagraves Prod. Co. 1-A 30
*O'Brien, Moody-Seagraves Prod. Co. 2-A 35
*Mitchell, United Prod. Corp. 5 60
*O'Brien, United Prod. Corp. 8 50
*Power, United Prod. Corp. 6 ..... gas

Wells completed 8
Production 205
Abandoned 2
Gas 1

*Old wells plugged back or deepened.

SARATOGA—HARDIN COUNTY

Cotton, Rio Bravo Oil Co. 133-A 10
otton, Rio Bravo Oil Co. 133-A 2
Cotton, Rio Bravo Oil Co. 134-A 21

Wells completed 3
Production 33
Abandoned 0

MISCELLANEOUS—TEXAS

Brazoria County—
J. G. and G. W. McNeil Sur., Stringfellow, McCaleb et al 1 ..... abd
Grimes County—
Yeamens Sur., Sullivan, Stanolind Oil & Gas Co .1 ..... abd
Jefferson County—
Dyches Sur., Tolliver, C. R. Tolliver et al 1 ..... abd
Liberty County—
DeLos Santos Sur., Harvard, Hamm et al 1 ..... abd
Montgomery County—
John O. Davis Sur., Cartwright, Heep Oil Corp. 1 ..... gas
San Augustine County—
Pickering Lbr. Co., Baker & Smith 1 .. abd
San Jacinto County—
Bennett, E. P. Edwards et al 1 ..... abd
Tyler County—
Caswell, King Oil Co. 1 ..... abd
Refugio County—
Bonnie View Subd., Damaan, Bianco Creek Oil Co. 1 ..... abd
Estaban Lopez Sur., Peck, J. C. Dixon 1 abd

Wells completed 10
Abandoned 9
Gas 1

LOUISIANA
LAKE TERRE—TERREBONNE PARISH

State, The Texas Co. 12 2700
EAST HACKBERRY—CAMERON PARISH
Landry, Calcasieu Oil Co. 1 300
Watkins, Calcasieu Oil Co. 22 135
Irwin, J. G. Sutton 5 600

Wells completed 2
Production 1035
LEESVILLE—LA FOURCHE PARISH
Vizier, Pop Oil Co. 1 800
L. L. & E., The Texas Co. 4 900

Wells completed 2
Production 1700
LOCKPORT—CALCASIEU PARISH
Martha Moss, Union Sulphur Co. 2 .... abd
FORT BARRE—ST. LANDRY PARISH
Sibille, Port Barre Oil Co. 1 500
Botney Bay, The Texas Co. 11 1630

Wells completed 2
Production 2130
Abandoned 0
SULPHUR—CALCASIEU PARISH
Fee, Union Sulphur Co. 732 ..... abd
Fee, Union Sulphur Co. 768 2500

Wells completed 2
Production 2500
Abandoned 1
VINTON—CALCASIEU PARISH
Gray, Gulf Refining Co. 1 ..... abd
MISCELLANEOUS—LOUISIANA
Calcasieu Parish—
Sec. 29-9s-10w, Industrial, J. O. Davis 1 abd
Sec. 25-10s-10w, Vincent, Hill Oil Co. 1. abd
Sec. 11-9s-11w, Hewitt, Success Oil Co. 1 abd
Iberia Parish—
Jeff. Island—Lake Peigneur, Jeff. Lake Oil Co. 30 ..... abd
LaFourche Parish—
Chacahoula—Stark, State Prod. Co. "D" abd
Terrebonne Parish—
Bay St. Elaine—Wurslow, Freeport Sulphur Co. 1 ..... abd
Vermillion Parish—
Gueydan—Alliance Trust Co., Pure Oil Co. 2 500

Wells completed 7
Production 500
Abandoned 6

EAST TEXAS (Border Counties)
Wells Completed

	Comp.	Prod.	Dry	Gas*	Rigs	Drlg.	Ttl.
Bowie	0	0	0	0	0	4	4
Cass	3	0	3	0	0	4	4
Harrison	0	0	0	0	2	3	5
Marion	0	0	0	0	0	3	3
Panola	3	0	0	0	3	1	4	5
Red River	2	0	2	0	0	0	0
Shelby	0	0	0	0	0	1	12	13
Total April	8	0	5	3	4	30	34
Total March	3	0	3	1	7	32	39
Difference	5	0	3	2	3	2	5

*Gas production, Panola County 17,684,000 feet.

EAST TEXAS (Border Counties)
WELLS COMPLETED
CASS COUNTY

Lavinia Morven Sur.—Richey, William S. King 1 ..... dry
J. A. McFarland Sur.—Wilson, J. F. Morrisy 1 ..... dry
John C. Byers Sur.—Anthony, Olds & King 2 ..... dry

PANOLA COUNTY

M. A. LaGrone Sur.—Cameron Lbr. Co., Hoffer et al 1 ..... abd
B. C. Jordan Sur.—Cadenhead, Nat. Gas Prod. Co. 1 ..... gas
B. C. Jordan Sur.—Cadenhead, Nat. Gas Prod. Co. 2 ..... gas
B. C. Jordan Sur.—Werner, United Prod. Corp. 12 ..... gas

Gas production 17,684,000

ROCKY MOUNTAIN AREA

NEW MEXICO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
DeBaca	0	0	0	0	0	2	2
Eddy	1	25	0	0	2	4	6
Lea	1	6,269	0	0	1	5	6
McKinley	0	0	0	0	1	5	6
Rio Arriba	0	0	0	0	0	3	3
San Juan	0	0	0	0	0	7	7
San Miguel	0	0	0	0	0	5	5
Miscellaneous	0	0	0	0	2	16	18
Total Apr.	2	6,294	0	0	6	47	53
Total Mar.	4	25,206	0	0	8	43	51
Difference	2	18,912	0	0	2	4	2

WELLS COMPLETED

24-18-38 Turner, Midwest Ref. Co. 2....6269
5-18-27 Brainard, R. D. Compton 4..... 25

Wells completed 2
Production 6294

MONTANA
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Carbon	0	0	0	0	1	9	10
Cascade	0	0	0	0	0	3	3
Fergus	0	0	0	0	0	2	2
Glacier	0	0	0	0	3	4	7
Hill	0	0	0	0	0	2	2
Liberty	0	0	0	0	1	5	6
Musselshell	1	0	1	0	0	1	1
Pondera	0	0	0	0	2	2	4
Teton	0	0	0	0	0	4	4
Toole	0	0	0	0	6	4	10
Miscellaneous	0	0	0	0	3	13	16
Total Apr.	1	0	1	0	16	49	65
Total Mar.	0	0	0	0	13	51	64
Difference	1	0	1	0	3	2	1

WELLS COMPLETED
MUSSELSHELL COUNTY

25-11-24 Minn.-Flatwillow Oil Co. 1 ... dry

WYOMING
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Drlg.	Ttl.
Big Horn	0	0	0	0	0	3	3
Carbon	0	0	0	0	1	6	7
Fremont	0	0	0	0	2	2	5
Hot Springs	0	0	0	0	0	2	2
Natrona	0	0	0	0	2	7	9
Park	0	0	0	0	2	6	8
Sweetwater	0	0	0	0	2	5	7
Sublet	0	0	0	0	0	7	7
Uinta	0	0	0	0	0	6	6
Weston	3	128	0	0	2	9	11
Miscellaneous	0	0	0	0	0	10	10
Total Apr.	3	128	0	0	11	64	75
Total Mar.	2	910	0	0	10	62	72
Difference	1	782	0	0	1	2	3

WELLS COMPLETED

15-46-64 Tug Oil Co. 1 100
17-46-63 Egaso Operating Co. 16 3
6-46-63 Wyo. O. & G. 1..... 25

Wells completed 3
Production 128

COLORADO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Drlg.	Ttl.
Arapahoe	0	0	0	0	0	2	2
Boulder	0	0	0	0	0	4	4
Elbert	0	0	0	0	0	3	3
Fremont	0	0	0	0	0	5	5
LaPlata	0	0	0	0	1	3	4
Larimer	0	0	0	0	1	12	13
Las Animas	0	0	0	0	1	2	3
Moffat	1	0	0	1	2	2	4
Morgan	0	0	0	0	3	1	4
Rio Blanco	0	0	0	0	0	4	4
Routt	0	0	0	0	1	2	3
Weld	0	0	0	0	2	4	6
Miscellaneous	0	0	0	0	0	22	22
Total Apr.	1	0	0	1	11	66	77
Total Mar.	2	27	1	0	10	70	80
Difference	1	27	1	1	1	4	3

WELLS COMPLETED
MOFFAT COUNTY

9-6n-91 Bogenschultz, Ohio Oil Co. 1.. gas

Wells completed 1
Gas 1
Gas production 11,000,000

UTAH
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Drlg.	Ttl.
Total April	0	0	0	0	1	19	20
Total March	0	0	0	0	1	19	20
Difference	0	0	0	0	0	0	0

KENTUCKY FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Ohio	4	40	1	0	0	5	5
Daviess	1	25	0	0	1	4	5
Hancock	2	0	1	1	3	8	11
Barren	0	0	0	0	0	2	2
McLean	5	50	3	0	4	8	12
Hart	26	1,295	5	4	0	19	19
Muhlenberg	2	0	1	1	0	0	0
Greene	0	0	0	0	1	1	2
Henderson	2	50	1	0	0	0	0
Webster	0	0	0	0	0	2	2
Edmonson	0	0	0	0	0	1	1
Todd	0	0	0	0	0	1	1
Nelson	0	0	0	0	0	1	1
Taylor	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Bath	0	0	0	0	0	1	1
Breckenridge	0	0	0	0	0	1	1
Christian	0	0	0	0	0	5	5
Hopkins	2	0	2	0	0	2	2
Grayson	1	0	1	0	0	0	0
Boyle	0	0	0	0	0	1	1
Cumberland	1	0	0	1	0	2	2
Knox	2	0	0	2	0	0	0
Ttl. Apr...	48	1,460	15	9	9	66	75
Ttl. Mar...	41	888	7	12	9	62	71
Difference	7	572	8	3	0	4	4

WELLS COMPLETED
OHIO COUNTY

Hartford—A. E. McCarty, Cumberland Pet. 3 ..... dry
Frank Hanna, Doug Bolling 2 20
Oston Ramsey, Bader Oil Co. and Thomas 2 10
Lafe Payne, D. J. White & Co. 2.... 10

Wells completed 4
Production 40
Dry 1

DAVIESS COUNTY

Owensboro—Davis heirs, Evans, Garrison & Co. 16 25

HANCOCK COUNTY

Pellville—Pate Lyons, James C. Ellis & Co. 1 ..... dry
Jeff Williamson, Sand Pet., Inc. 1 .... gas

Wells completed 2
Dry 1
Gas 1

McLEAN COUNTY

Calhoun—Tom Henry, James C. Ellis 1.. dry
J. Hatfield, Creek Drlg. Co. 1 ..... dry
Story, S. A. Cobb & Co. 1 ..... dry
L. C. Atherton, Thelma M. Engle & Co. 4 20
George Boles, Wittmer Oil & Gas 1.. 20

Wells completed 5
Production 60
Dry 3

HART COUNTY

Horse Cave—W. E. Payton, Rivers Oil and Thomas Wittmer 13 25

Green Whitlow, H. Z. Clark & Co. 9.. 200
Alice Payton, Anchor Oil & Gas 2 .. 195
Payten, Carpenter & Frost 3 100
Garvin, Carpenter & Frost 1 ..... gas
Forest Handy, Rivers Oil and H. Z. Clark 3 75
W. B. Perkins, L. C. Young 2 240
Shaw, L. C. Young 2 50
Mrs. Emmitt Seymour, Mud Branch Oil & Gas 2 35
Mrs. Emmitt Seymour, Mud Branch Oil & Gas 30
Lafe Wilson, Gardenshire & Bevill 1. dry
Grover Jaggers, Hupp, Duff & Co. 14 60
Grover Jaggers, Hupp, Duff & Co. 15 60
Twinham, J. M. Murphy & Co. 1..... 30
Twinham, J. M. Murphy & Co. 2..... 30
Twinham, J. M. Murphy & Co. 3..... 35
Twinham, J. M. Murphy & Co. 4..... 35
Twinham, J. M. Murphy & Co. 5..... 30
T. J. Cartmill & Co., Unknown 1 .... dry
William Self, Unknown 1 ..... dry
James Bush, Unknown 1 ..... gas
Dan Bush, Unknown 1 ..... gas
A. M. Bush, Unknown 1 ..... gas
L. L. Doyle, Unknown 1 ..... dry
W. W. Stasel, Unknown 1 ..... dry

Wells completed 26
Production 1295
Dry 5
Gas 4

MUHLENBERG COUNTY

Greenville—W. C. Dukes, Ohio Oil 1 ... dry
A. F. Walker, Acct. No. 2, Ohio Oil 1. gas

Wells completed 2
Dry 1
Gas 1

HENDERSON COUNTY

Niagara—S. A. Freeman, Imperial Oil & Gas Products 2 50
Paris Walker, Imperial Oil & Gas Products ..... dry

Wells completed 2
Production 50
Dry 1

HOPKINS COUNTY

Madisonville—T. W. Reynolds, Federal Fuel Corp. 1 ..... dry
Unknown, Federal Fuel Corp. 1 ..... dry

Wells completed 2
Dry 2

GRAYSON COUNTY

Litchfield—Joe Wheeler, Dewees & Co. 1 dry

CUMBERLAND COUNTY

Burkesville — Leon Curtis, Sunnybrook Oil & Gas 7 ..... gas

KNOX COUNTY

Barboursville—Carnes, Wittmer Oil & Gas 1 ..... gas
Campbell, Petroleum Exploration 1 .. gas

Wells completed 2
Gas 2

EASTERN FIELDS

Summary of Completed Work

Field—	Comp.	Prod.	Dry	Gas
Allegany	14	41	0	0
Bradford	40	95	0	0
Venango-Clarion	3	2	0	1
Butler-Armstrong	3	7	1	0
Middle Field	0	0	0	0
Tioga-Wayne	4	0	3	1
S. W. Pennsylvania	3	40	1	0
Southeast Ohio	10	96	5	1
West Virginia	16	0	4	12
Total April	93	281	14	15
Total March	113	453	21	17
Difference	20	172	7	2

Summary of Work Under Way

Fields—	Rigs	Drlg.	Ttl.
Allegany	3	9	12
Bradford	6	24	30
Venango-Clarion	2	6	8
Butler-Armstrong	1	2	3
Middle Field	0	1	1
Tioga-Wayne	6	25	31
S. W. Pennsylvania	4	4	8
Southeast Ohio	16	17	32
West Virginia	21	31	52
Total April	58	119	177
Total March	57	115	172
Difference	1	4	5

WELLS COMPLETED
ALLEGANY

Fee, Jacob Meridian et al 4
McCaffery, Mrs. H. S. Westran 1
Fee, Arthur F. Blanchard 2
Fee, N. V. V. Franchot 30
Miller, Jacob W. Bucher estate 1
Fee, Sawnett Oil Corp. ..... pressure
Fee, Demcey Oil Co., Inc. ..... pressure
Ames, O. A. Eastman et al .. .. pressure
Forest Oil Corp. 1
Forest Oil Corp. 1
Forest Oil Corp. 1
Forest Oil Corp. ..... pressure
Forest Oil Corp. ..... pressure
Forest Oil Corp. ..... pressure

Wells completed 14
Production 41
Pressure 6

BRADFORD

Raney, Chief Producing Co. 1
Hamlin, F. J. Eisert 1
Franchot, Loop estate 10
Scio, C. A. Duke estate 1
Fee, Forest Oil Corp. 1
Fee, Forest Oil Corp. 1
Fee, Forest Oil Corp. 1
Fee, Forest Oil Corp. ..... pressure
Forest Petroleum Corp. 1
Fee, Forest Petroleum Corp. 1
Fee, Forest Petroleum Corp. 1
Fee, Forest Oil Corp. 1
Fee, Forest Oil Corp. 1
Fee, Forest Oil Corp. 1
Fee, Forest Oil Corp. ..... pressure
Fee, Forest Pet. Corp. (7 wells) .... pressure
Willett, Sloan & Zook Pet. Co. .... pressure
Borden, T. P. Thompson, Jr. 1
Artley, Bradford Prod. Co., Inc. ... 1
Duke, Sloan & Zook Oil Co. 1 3
Quintuple, Healey Pet. Corp. 1
Burdic, South Penn Oil Co. 2
DeGolia, Healey Pet. Corp. 4
Fee, Sloan & Zook 5
Fee, Sloan & Zook 15
Fee, Sloan & Zook 20
DeGolia, Healey Pet. Corp. 5
DeGolia, Healey Pet. Corp. 4
Griffith, E. C. Tanner estate 2
Bingham 538 and 539, A. B. Collins.... 1
Hunt, Healey Pet. Corp. 1
Melvin, South Penn Oil Co. 1
Mitchell, Bradford Prod. Co., Inc. 1

Wells completed 40
Production 95
Pressure 10

VENANGO-CLARION

Sporer, Fryburg Motor Co. 4 ..... gas
Sweetapple, A. L. Sweetapple et al 11.. 1
McFadden, J. D. and C. D. Berry 19 ... 1

Wells completed 3
Production 2
Gas 1

BUTLER-ARMSTRONG

Shroup, Shroup et al 1 ..... dry
Johns, I. N., M. M. and C. C. Johns 3.. 1
Ripper, Willis M. Ruby 3 6

Wells completed 3
Production 7
Dry 1

TIOGA-WAYNE

Thomas, East Penn Development Co.... gas
Dickinson, York Penn Co. ..... dry
Fair Grounds, Penn United Gas Co. ... dry
Davey, Allegheny Gas Co. ..... dry

Wells completed 4
Dry 3
Gas 1

SOUTHWEST PENNSYLVANIA

WELLS COMPLETED
ALLEGHENY COUNTY

Martin, Eph. Martin et al 1 ..... dry
WASHINGTON COUNTY
Clark, Bromley, Bungard et al 3 10
Hazlett, Raymond E. Orrill, et al 1 ... 30

SOUTHEAST OHIO

WELLS COMPLETED
COSHOCTON COUNTY

Lower, Ohio Gas Light & Coke Co. 1 ... gas
Rine, McClay Brothers et al 1 ..... dry
LICKING COUNTY
Tarlton, Emerald Pet. Co., 1 60
Smith heirs, F. B. Settles 5 5
MEDINA COUNTY
Essig, Oko Oil & Gas Co. 54 6
Packard, E. R. Edson & Son Co. 35 25
Shaw, E. R. Edson & Son Co. 19 ..... dry
Packard, E. R. Edson & Son Co. 36 .... dry
MUSKINGUM COUNTY
Staker, Ohio Fuel Gas Co. 2 ..... dry
Spring, Fritz Oil & Gas Co. 1 ..... dry

WEST VIRGINIA

WELLS COMPLETED
BOONE COUNTY

Federal Coal Co., Pure Oil Co. 56 ..... gas
CABELL COUNTY
Hans-Watts Realty Co., Wilson & Nowery 2 ..... gas
CALHOUN COUNTY
Jackson, T. J. and A. H. Jackson 3 ... gas
FAYETTE COUNTY
Loop Creek estate, Grosscup & Schultz 1 dry
LINCOLN COUNTY
A. and E. Elkins, Parsner Gas Co. 2 ... gas
LOGAN COUNTY
Merrill Coal Co., Cumberland Pet. Co. 5 gas
MINGO COUNTY
Central Trust Co., United Fuel Gas Co. 4,324 ..... gas
Central Trust Co., United Fuel Gas Co. 4,329 ..... gas
Cotiga Development Co., United Fuel Gas Co. 4,321 ..... dry
MONONGALIA COUNTY
Taylor, West Penn Gas Corp. 1 ..... dry
PUTNAM COUNTY
Cottle, W. H. Kirtley 1 ..... gas
RITCHIE COUNTY
J. P. Allen, H. H. Allen 1 ..... gas
ROANE COUNTY
Burdette, H. B. Heeter 1 ..... dry
WAYNE COUNTY
Guyan Valley Bank, A. F. Black trustee 1 ..... gas
Pratt, Maebohn and Huffman 1 ..... gas
WETZEL COUNTY
Ashcraft, Pittsburgh & West Virginia Gas Co. 5,403 ..... gas

CENTRAL OHIO

Summary of Field Operations

	Comp.	Pro.	Dry	Gas	Rgs.	Dig.	Ttl.
Ashland	0	0	0	1	2		3
Lorain	1	0	0	1	1		2
Medina	6	66	3	0	0		3
Holmes	0	0	0	0	1		1
Cuyahoga	0	0	0	0	0		1
Knox	0	0	0	0	1		1
Richland	0	0	0	0	1		1
Coshocton	2	0	1	1	2		2
Summitt	2	0	1	1	0		3
Licking	1	0	0	1	0		2
Muskingum	2	0	1	1	4		6
Athens	1	0	1	0	2		3
Tuscarawas	0	0	0	0	2		2
Stark	7	0	0	7	3		15
Fairfield	1	0	0	1	0		1
Guernsey	2	2	0	1	1		5
Belmont	3	0	1	2	2		5
Gallia	0	0	0	0	0		1
Scioto	0	0	0	0	0		2
Pike	0	0	0	0	0		2
Carroll	0	0	0	0	0	4	4
Columbiana	0	0	0	0	0	1	1
Crawford	0	0	0	0	0	1	1
Lawrence	1	0	0	1	0	8	8
Total Apr.	29	68	8	17	21	68	83
Total Mar.	39	155	17	13	21	64	85
Difference	10	87	9	4	0	4	4

WELLS COMPLETED
LORAIN COUNTY

Grafton—F. Armbruster, Ramage & Willis 3 ..... gas
MEDINA COUNTY
Chatham—Henry Essig, Oko O. & G. 52. 10
Henry Essig, Oko O. & G. 54..... 6
Geo. Packard, Edson Sons Co. 35.... 50
A. W. Shaw, Edson Sons & Co. 22.... dry
Harrisville—Joseph Funk, Barnhart & Co. 9 ..... dry
York—Luke W. Battie, McMillan & Co. 1 ..... dry

Wells completed 6
Production 66
Dry 3

COSHOCTON COUNTY

Pike—R. L. Rine, Whittmer & McClay 1 dry
Mill Creek—Nick Lower, Millersburg Gas Light & Coke Co. 3..... gas

Wells completed 2
Dry 1
Gas 1

SUMMITT COUNTY

Richfield—M. G. and C. O. Osborn, Barnhart & Co. 1 ..... gas
Bath—O. C. Conlan, Wiser Oil 1..... dry

Wells completed 2
Dry 1
Gas 1

LICKING COUNTY

Perry—Jacob Lothers, McClay Bros. 3. gas
MUSKINGUM COUNTY
Union—Jac. S. Morrison, Atha Co. 1... dry
Brush Creek—Ed. Middleton, Fritz O. & G. 2 ..... gas

Wells completed 2
Dry 1
Gas 1

ATHENS COUNTY

Carthage—Chas. Ackley, Clyde Cody 4.. dry
STARK COUNTY
Jackson—Eliza Hall, East Ohio Gas 2.. gas
Brainard K. Pry, East Ohio Gas 2... gas
T. K. Harris No. 2, East Ohio Gas 4.. gas
C. and M. Yearkey, Brendall & Co. 2. gas
Lake Cable Co., Brendall & Co. 7.... gas
Lake-O-Spring, Wiser Oil 2 ..... gas
Joe King, Athens O. & G. Co. 1..... gas

Wells completed 7
Gas 7

FAIRFIELD COUNTY

Berne—E. Ruff, City Nat. Gas Works 3 gas
GUERNSEY COUNTY
Cambridge—Chas. H. Scott, Jewell & Co. 1 2
Ed. and Kate Dodds, Chas. Smith & Co. 1 ..... gas

Wells completed 2
Production 2
Gas 2

BELMONT COUNTY

Somerset—J. A. Johnson, Wm. Curn & Co. 1 ..... dry
John C. Vogt, Ohio Fuel Gas 1-5644.. gas
Geo. Butler, Ohio Fuel Gas 1-5645.. gas

Wells completed 3
Dry 1
Gas 2

LAWRENCE COUNTY

Union—Fritz Kitts, Tri-State O. & G. 1. gas

LIMA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Hancock	0	0	0	0	0	1	1
Allen	0	0	0	0	0	1	1
Sandusky	0	0	0	0	0	1	1
Seneca	4	205	0	2	1	9	10
Lucas	0	0	0	0	0	5	5
Ottawa	0	0	0	0	0	1	1
Hardin	1	10	0	0	0	0	0
Darke	1	0	0	1	0	0	0
Logan	0	0	0	0	0	1	1
Putnam	0	0	0	0	0	1	1
Wyandot	0	0	0	0	3	4	7
Total Apr.	6	215	0	3	4	24	28
Total Mar.	10	110	2	4	3	15	18
Difference	4	105	2	1	1	9	10

WELLS COMPLETED
WOOD COUNTY

Montgomery — A. F. Carpenter, Onsel Bros. 4, 5, 6, 7, 8, 9..... abd
Freedom—J. G. H. Stein, Onsel Bros. 1. abd
Henry—E. C. Blackall, H. A. Werner 1. abd
W. S. Eberly, Ohio Oil Co. 10, 11, 14.. abd

Abandoned 11

ALLEN COUNTY

Amanda—A. B. Moorman, Ohio Oil Co. 1, 2, 3, 4, 5, 7, 9..... abd
Perry—Henry Hefner, H. Hefner & Sons 2, 4, 5..... abd

Abandoned 10

SANDUSKY COUNTY

Rice—I. Waggoner, Ohio Oil Co. 5..... abd
Sandusky—Sam B. Waggoner, Ohio Oil Co. 2, 13..... abd
Daniel Hensel, Ohio Oil Co. 11..... abd
Washington—Hattie Wolfe, Ohio Oil 4. abd

Abandoned 5

SENECA COUNTY

Hopewell—Cyrus D. Knepper, J. H. Murphy & Sons 2..... gas
Joseph Bihn, J. H. Murphy & Sons 2. 105
Frank Fox, M. P. McPherson 2..... 55
Liberty—Lloyd Hoover, L. Curry 1.... gas

Wells completed 4
Production 160
Gas 2

HARDIN COUNTY

Cessna—A. W. Kritzler, Commonwealth Gas Corp. 4 10

DARKE COUNTY

Mississinewa—A. and J. Breymaier, Lee Booth 1 ..... gas

ILLINOIS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	0	0	0	0	0	3	3
Coles	0	0	0	0	0	2	2
Edgar	0	0	0	0	0	1	1
Crawford	2	0	2	0	1	3	4
St. Clair	1	0	1	0	0	2	2
Randolph	0	0	0	0	0	2	2
Monroe	0	0	0	0	0	2	2
Washington	0	0	0	0	0	1	1
Boone	0	0	0	0	0	1	1
Madison	1	0	1	1	0	1	1
Jefferson	0	0	0	0	0	1	1
Jasper	0	0	0	0	0	1	1
Marion	0	0	0	0	0	1	1
Total April	4	0	4	0	1	21	22
Total March	3	15	1	1	0	20	21
Difference	1	15	3	1	0	0	1

WELLS COMPLETED
CLARK COUNTY

Parker—M. L. Brisco, Ohio Oil 2, 3, 6, 7, 8, 10, 11, 12 ..... abd
E. G. Epperson, Ohio Oil 2, 4, 5, 8 .. abd
J. G. Goble, Ohio Oil 1, 2, 3, 4, 9 .... abd
Deake heirs No. 2, Ohio Oil 3, 4, 5, 6, 7, 9, 11, 13, 15, 16, 18 ..... abd

Abandoned 28

CRAWFORD COUNTY

Montgomery — I. M. Laughead, John Phipps 1 ..... dry
Chas. Seaney, W. C. BrBridge, Inc. 1 dry
Honey Creek—J. W. Ford, Ohio Oil 1.. abd
Elizabeth Parker, Ohio Oil 3, 4, 5 .. abd
S. V. Allison, Ohio Oil 2 ..... abd
J. W. Ford, Ohio Oil 1, 2 ..... abd
C. L. Weger, Ohio Oil 1, 2 ..... abd
H. I. Jones, Ohio Oil 3, 4 ..... abd
S. L. Martin, Ohio Oil and Associated Prod. 1, 2, 3, 4, 5 ..... abd
Southwest—C. E. Davis, Phipps & Co. 1 abd

Abandoned 17

WABASH COUNTY

Friendsville—Lewis J. Armstrong, W. M. Bell & Co. 1 ..... abd
ST. CLAIR COUNTY
Sugar Loaf—Thos. Wright, Coleman & Smith 1 ..... abd
M. A. Fullerton, Coleman & Smith 1 abd
Winterhoff & LeCompte, Lon Coleman 1 ..... abd
Hall-Wallace-Dyroff, St. Clair County Oil 1 ..... abd
Hall & Wiehl, St. Clair Oil 2 ..... abd
High School, Ava Oil & Gas 1, 2, 3, 4 abd
O'Fallon—E. H. Smiley, Johnson Oil Co. 1 ..... dry
East Carondalet—Stein, Hugo & Co. 1. abd
Henry Dixon, Robinson & Co. 1 ..... abd

Wells completed 1
Dry 1
Abandoned 11

MADISON COUNTY

Fosterburg — Tim Merigan, Minther-Goethe & Co. 1 ..... dry

INDIANA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Gibson	3	200	0	2	0	3	3
Pike	1	55	0	0	0	2	2
Daviess	0	0	0	0	0	6	6
Warrick	0	0	0	0	0	1	1
Sullivan	2	0	1	1	0	6	6
Spencer	1	0	1	0	0	7	7
Perry	1	0	1	0	0	5	5
Knox	0	0	0	0	0	5	5
Marshall	0	0	0	0	1	1	2
Lagrange	0	0	0	0	0	1	1
Putnam	0	0	0	0	0	1	1
Posey	0	0	0	0	0	1	1
Franklin	2	0	2	0	0	0	0
Laporte	1	0	1	0	0	0	0
Dubois	0	0	0	0	0	2	2
Harrison	0	0	0	0	0	3	3
Hamilton	0	0	0	0	0	2	2
Dearborn	0	0	0	0	0	1	1
Crawford	0	0	0	0	0	1	1
Greene	0	0	0	0	0	3	3
St. Joe	0	0	0	0	0	1	1
Rush	1	0	0	1	0	2	2
DeKalb	0	0	0	0	0	1	1
Pulaski	0	0	0	0	0	1	1
Elkhart	0	0	0	0	0	1	1
Fountain	0	0	0	0	0	1	1
Orange	0	0	0	0	0	1	1
Hancock	1	0	1	0	0	0	0
Johnson	1	0	0	1	0	0	0
Ripley	0	0	0	0	0	1	1
Union	0	0	0	0	0	1	1
Total Apr.	14	255	7	5	1	61	62
Total Mar.	10	240	7	1	2	60	62
Difference	4	15	0	4	1	1	0

WELLS COMPLETED
GIBSON COUNTY

Columbia—Chas. C. Steele, Knox Eng. Corp. 1 ..... gas
G. B. Allen, Wabash Pub. Serv. Co. 2 gas
Washington—Robt. Huey, Big 4 O. & G. 1 200
Center—L. Jenkins, Ewing R. Emison 2 abd

Wells completed 2
Production 200
Gas 2
Abandoned 1

PIKE COUNTY

Logan—E. Loveless, P. C. Andrews 11 .. 55

SULLIVAN COUNTY

Hadden—Thompson-Crathers, Lloyd & Co. 1 ..... dry

Curry—John Thompson, Wyman & Brown 1 ..... gas

Wells completed 2
Dry 1
Gas 1

SPENCER COUNTY

Huff—Phillip hrs., Daugherty & Co. 1 .. dry

PERRY COUNTY

Anderson—Margaret Taylor, Bolyard & Co. 1 ..... dry

FRANKLIN COUNTY

Highland—John Beneker, American Industrial Gas Corp. 1 ..... dry

Laurel—Johnnie Jinks, American Industrial Gas Corp. 1 ..... dry

Wells completed 2
Dry 2

LAPORTE COUNTY

Lincoln—John Siddles, H. J. Hauck & Co. 1 ..... dry

RUSH COUNTY

North of Carthage—Unknown, Stout Bros. 1 ..... gas

HANCOCK COUNTY

Charlottstown—Ramsey, Knightstown Nat. Gas 2 ..... dry

JOHNSON COUNTY

Franklin—Vandiver, unknown 1 ..... gas

MICHIGAN FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Muskegon	0	0	0	0	0	1	1
Isabella	1	85	0	0	13	28	41
Midland	12	18,200	2	0	5	35	40
Clare	2	0	1	1	2	0	2
Lake	0	0	0	0	0	2	2
Cass	0	0	0	0	1	1	2
Kent	0	0	0	0	1	2	3
Oceana	0	0	0	0	1	5	6
Emmett	0	0	0	0	0	1	1
Eaton	0	0	0	0	1	0	1
Iosco	0	0	0	0	2	0	2
Ogemaw	1	10	0	0	0	0	0
Montmorency	0	0	0	0	3	0	3
Sanilac	0	0	0	0	3	0	3
Leelanau	0	0	0	0	1	0	1
Gratiot	0	0	0	0	2	0	2
Shiawassee	0	0	0	0	2	2	4
Allegan	0	0	0	0	0	4	4
Livingston	1	0	1	0	1	1	2
Osceola	0	0	0	0	2	0	2
St. Clair	0	0	0	0	1	0	1
Alpena	0	0	0	0	1	0	1
Cheyboygan	0	0	0	0	0	1	1
Kalamazoo	0	0	0	0	0	1	1
Oakland	0	0	0	0	0	1	1
Newyago	1	0	1	0	0	0	0
Saginaw	0	0	0	0	2	1	3
Gennessee	0	0	0	0	1	0	1
St. Joe	0	0	0	0	1	0	1
Total April	16	18,295	5	1	46	86	132
Total March	8	4,015	4	0	50	79	129
Difference	8	16,280	1	1	4	7	3

COMPLETED WELLS

ISABELLA COUNTY

Vernon—John Brief, Mellon-Pollock Oil 3 85

MIDLAND COUNTY

Greendale—A. G. Struble, W. L. McClanahan, Inc., 4 700
W. S. Root, W. L. McClanahan, Inc. 1 400
Corning Estate, W. L. McClanahan, Inc. 1 ..... dry
H. W. Morrison, W. L. McClanahan, Inc. 4 3000
Emma O. Reed, Pure Oil 1 3000
Emma O. Reed, Pure Oil 3 1600
Chas. Mullett, Pure Oil Co. 2 3500
Chas. Mullett, Pure Oil 3 2500
State of Michigan, Talbot Oil C-1 3500
Lee—Thom, Wells & Miller 1 ..... dry

Wells completed 10
Production 18,200
Dry 2

CLARE COUNTY

Grant—Pere Marquette, W. J. Sovereign 1 ..... gas
Jas. McKay, James A. McKay 9 .... dry

Wells completed 2
Dry 1
Gas 1

OGEMAW COUNTY

Horton—Wm. T. Yeo, Pure Oil 10

LIVINGSTON COUNTY

Osceola—Albert L. Smith, B. A. Browne & Co. 1 ..... dry

NEWYAGO COUNTY

Sherman—A. J. Bates, Newyago Oil & Gas Co. 1 ..... dry

CURTAILMENT BRINGS PRODUCTION DOWN

(Continued from Page 65)

have been engaged in the voluntary effort to co-operatively adjust the production of oil in this State to the normal demand therefor. For the most part this effort has been successful, but not to the extent which was originally hoped because of the failure of a limited group to curtail their oil production in accordance with the uniform procedure accepted by their fellow operators. This lack of co-operation has had the effect of maintaining a slight surplus of production over the demand and with oil as with most other commodities it is the undemanded surplus that determines the price of an entire amount of a commodity. Consequently the result of this unfortunate attitude on the part of some producers has been to keep the prices of California oil at a lower level than those prevailing in other districts which are under legal restrictions of output and to prevent a proper return on the capital and the labor engaged in the business of producing oil. It can be stated positively that much of the economic unbalance from which California is now suffering is directly attributable to the losses which the oil industry has suffered because of the actions of some of its members.

"In a desperate effort to avert an impending crisis the rank and file of the California oil business have reorganized themselves. They have taken council with and included with themselves representatives of other public institutions and have established two committees for the guidance of the program. These committees are headed by William Keck and H. Paul Grimm, prominent figures in California oil circles and both committees are bending all their energies toward a prompt reduction in the daily supply of California oil.

"The State of California is capable of producing more than 1,000,000 bbls. of oil daily but has a present marketable outlet for only 468,000 bbls. daily. Its present production is slightly in excess of 500,000 bbls. daily so that there is a surplus of more than 32,000 bbls. daily. And it is this surplus which is holding conditions within the industry and in all associated businesses at such a low level. The burden of purchasing and storing unwanted oil has been a severe one and to companies whose reserves consist largely of tremendous quantities of unmarketable oil, a problem of taking care of an additional surplus has become almost unsurmountable.

Two Alternatives

"The oil business of California now faces two alternatives. It can permit its affairs to become so chaotic and allow its production to remain unbalanced with the very certain result of a complete collapse in prices which would be immediately followed by a general demoralization and a still more serious depression of the entire State. On the other hand, if it produces no more oil than is immediately needed conditions within the industry will become more stabilized; business conditions will improve; the jobs of those who are employed will become more secure and more jobs will be available. Since the question of oil curtailment is one of such importance to the entire population of California, the leaders of the new effort to stabilize the industry feel that the public should co-operate in every way possible and that all available influences should be put to work in the hope that the necessary results will be obtained before a crisis is precipitated. The situation is now so critical that only a few days are available in which to take the action that is necessary to save the industry."

FIRST NATURAL GAS IN TEXAS CELEBRATED

MARSHALL, Tex., May 28.—The twenty-third anniversary of the introduction of natural gas into the State of Texas was celebrated last week by the Marshall Chamber of Commerce.

The first natural gas used in Texas for industrial and domestic purposes was piped into Marshall through a 6-inch line 25 miles long from the wells in the Caddo Field at Mooringsport, La. A short time after the use of gas had been found satisfactory in Marshall a line was built from Mooringsport Field into Texarkana. The original line to Mooringsport has long been abandoned and since that time Marshall has received an independent supply from two other fields, the Waskon Field, in Harrison County, and the Bethany Field, across the line in Louisiana.

The celebration was opened at noon at the Marshall Hotel with a joint meeting of the Rotary, Kiwanis and Lions Clubs, at which a number of prominent men in the natural gas industry in Texas today were present.

In the evening a celebration was held on the courthouse square, at which a giant gas torch was lighted by the firing of a rocket, duplicating a similar ceremony held 23 years ago. During the afternoon open house was held by the local office of the United Gas Corp. in its new offices.

The principal speaker at the noonday program was Walter H. Sedberry, who pioneered the movement which brought natural gas to Marshall.

N. C. McGowen, president of the United Gas Public Service Corp., of Houston, told of the gradual development of the natural gas utilities in this State, and J. V. Strange, vice president of the United Gas, gave some statistics showing what the natural gas industry has meant to Texas industrially and otherwise. W. H. Langston, local manager of the company, reviewed the recent history of the gas utility in Marshall.

INCREASED PRODUCTION IN COLOMBIA AND PERU

CHATHAM, Ontario, May 28.—Official figures of International Petroleum Co. operations in April show increased production in both Colombia and Peru. At 55,202 bbls. the combined production of the two fields was the highest since March, 1931. Peruvivan production at 18,181 bbls. a day in April was higher than in March, but well under the average of 1931.

For the three months ending March 31, there were two new completions in the Peruvian Field with average initial production of 37 bbls. a day compared with 18 new completions and average initial production of 293 bbls. a day in the same period last year. Production for the three months was 1,844,244 bbls. compared with 2,176,876 bbls. in the same period of 1931.

In the Colombian Field for the quarter ending March 31, there were two new completions with average initial production of 692 bbls. compared with 15 new completions and average initial production of 620 bbls. in the 1931 period. Total production for the first quarter of 1932 was 4,604,504 bbls., comparing with 4,997,991 bbls. the first quarter of 1931.

PATENTS *Write for Free Book*
MUNN & CO.
Associated since 1846 with the Scientific American.
514 Scientific American Bldg., *Washington, D. C.*
1551 Scientific American Building,
24 West 40th Street, *New York City*
1303 Tower Building, *Chicago, Ill.*
686 Hobart Building, *San Francisco, Calif.*
311 Van Nuys Bldg., *Los Angeles, Calif.*

BE SURE OF A SURE SHOT

CALL OUR NEAREST SHOOTER

FUNDAMENTAL RESEARCH
is making us of
INESTIMABLE VALUE
to the producer
SURESHOT TORPEDO
(Incorporated)
Main Office, Huntington, W. Va.

PRODUCTION MEN!

Can keep reliably informed best through the weekly pages of The Oil and Gas Journal.

Resolve now to keep posted by filling out the coupon below and mailing it to us at once.

The OIL and GAS JOURNAL
PRODUCING REFINING PIPELINE ENGINEERING MARKETING
TULSA, OKLAHOMA

Please enter my subscription, effective with the current issue. I will remit ( ) $2.00 for 3 months; ( ) $3.00 for six months; ( ) $6.00 for one year.
enclose
(Check term of subscription desired)

NAME.....

TITLE OR OCCUPATION.....

COMPANY.....

SUBSCRIPTION ADDRESS.....

CITY..... STATE.....

6-2-32

CLASSIFIED WANTS

Read by Oil Men Everywhere

RATES

The rates for Classified Advertisements are 35 cents a line for the first insertion and 25 cents a line for each additional inserton. Six words usually constitute a a line. The following table will enable you to figure the cost of your advertisement:

	1 time	2 times	3 times	4 times
3 lines	1.05	1.80	2.55	3.30
4 lines	1.40	2.40	3.40	4.40
5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

For rates on Classified DISPLAY see opposite column.

Compute white space at the above rates. Mail your Classified Advertisement to

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

FOR SALE—EQUIPMENT

200 AMP. General Electric Arc Welder; portable; 220 V. 3 ph. 60 cy. Complete. Like new. $350. 7x6 Ingersoll-Rand Type ER-1 Air Compressor. Like new. $225. 8x6 Ingersoll-Rand Type ER-1 Air Compressor. Like new. $250. 36"x18' Fifield Screw Cutting Lathe. $650. Also large stock of lathes, shapers, pipe machines, bolt threaders, etc. Send for our list. Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West Second St., Cincinnati, Ohio.

FOR SALE—At discount, New WKM Deep Well winch mounted on 15-30 McCormick-Deering Tractor. Browning-Ferris Machinery Co., Dallas, Tex.

FOR SALE—22,000 feet of 16"O.D.x ¼" pipe in 40' lengths, P.E. Used one year as surface water line. The Sawhill Mfg. Co., 418 Oliver Bldg., Pittsburgh, Pa.

EQUIPMENT FOR SALE
Responsible operating company has a number of electric driven Worthington high pressure compressors, suitable for Oklahoma City Gas Lift. Reasonable price. Address P. O. Box 2420, Tulsa.

FOR SALE—One new magnetometer. Address 608 Royal Palm Hotel, Detroit, Michigan.

BUSINESS OPPORTUNITIES

OFFER 1,025 acres Southwest Metcalfe Co., Ky., and drill three wells to Corniferous most reasonable sum for half interest. Checks o.k. for both oil and gas. 20 year leases. 10c rental. Or will sell acreage outright. P. E. Tichenor, Evansville, Ind.

EXCELLENT proposition to independent oil operator. Have desirable acreage for drilling Clark County, Mississippi. In area holdings of companies. Radius few miles Gulf's Long Bell Lumber Co. No. 1 and F. X. Gowan, et al, B. H. Elfring No. 1 now being drilled. H. F. Case, Trustee, Box No. 187, Quitman, Miss.

DELAWARE CORPORATIONS organized. Smallest cost. Lowest taxes. Quick service. No restrictions. $100,000 capitalization cost $48. Corporation Fiscal Co., Wilmington, Del.

CAPITAL—Organizer with good connection will undertake the financing of first class oil or mining project—property and management must bear rigid investigation. Address Box F-202, The Oil and Gas Journal, Tulsa, Okla.

VOLCANIC NECK in Cuba. Geophysically investigated lands. 50 sub-soil acres for sale, to choose out of 1,000 acres. $2,000.00 per. Biosca. Guerrero 2. Marianao. Cuba. Buen Retiro.

OIL located before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

BUSINESS OPPORTUNITIES

SPECIALTY OIL BUSINESS Central Texas netting $275.00 monthly above operating expenses. Business growing steadily. Has no indebtedness. $2,500.00 cash, no terms or trades considered. Address Box F-203, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Brokers and salesmen in all the Cities in U. S. and Canada to cooperate with me in selling producing and nonproducing royalties at the right prices, located in the hot areas in Oklahoma, Kansas and Texas. Chances for big profits; send today for lists and maps. James R. Haynes, Grantville, Kansas.

SITUATIONS WANTED

STORES OR PURCHASING EXECUTIVE
Experienced Buyer, warehouseman, stock control, salvage recovery, M & S accounts. Good health and references. Address Box F-182, The Oil and Gas Journal, Tulsa, Okla.

SUPERINTENDENT of construction or operation of small refinery now open for employment. Address Box F-181, The Oil and Gas Journal, Tulsa, Okla.

OIL CHEMIST, 24, single, B. S. in Chem. Eng. from Eastern Univ. Experienced in analytical oil chemistry, crude assay and contacting clays. Desires position in process department. Location immaterial, salary secondary. Address Box F-170, The Oil and Gas Journal, Tulsa, Okla.

WANT POSITION—Oil, gas and mineral locator; I guarantee satisfaction or no pay. Frank Draper, Seymour, Iowa, R. No. 3.

GRADUATE CHEMIST. Six years laboratory and practical experience in refinery and absorption plants. Desire connection with equipment manufacturer, gasoline plants or refinery. Employed at present. Address Box F-200, The Oil and Gas Journal, Tulsa, Okla.

GRADUATE petroleum chemist and refinery engineer familiar with modern refinery practices. Experience includes pipe stills and treating light and lube oils. Address Box F-201, The Oil and Gas Journal, Tulsa, Okla.

MONEY RAISING

JAMES E. MILLER CO. will co-operate with responsible firms or parties seeking aid in financing projects of higher order. 207½ East Third Street, Tulsa, Okla.

FINANCE YOUR OWN project with shares bonded. Quickest, most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

JOHN MORRIS, 3608 WARREN ST., PHILADELPHIA, Pa., invites full facts first letter from capable parties planning negotiation of reasonable capital support for undertakings distinctly of higher order. Use registered mail, safeguard data.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 2443 N. W. 12th, Oklahoma City.

CAPITAL—Our distributing facilities are broad enough to handle all types of issues, both large and small, for those desiring capital through the sale of securities.

BROOKWORTH,
110 East 42d St., New York City.

MONEY RAISING
Have clients who are interested in refinancing large partially developed producing oil and gas properties or oil company with refinery, production, etc. Submit complete data first letter. William Sacks, Title Guarantee Bldg., St. Louis.

FINANCIAL ASSISTANCE ARRANGED
for new and operating companies. Bond issues prepared, issued and handled. Write fully. F. Walker, P.O. Box 1294, Indianapolis, Ind.

RANCHES AND FARM LANDS

FOR SALE—43,900-acre ranch. Presidio County, Texas, at $3.50 per acre patented basis. Address: A. J. Bogel, Box "N," Marfa, Texas.

PATENT ATTORNEYS

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form,
Evidence of Conception.
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER, ALLWINE & ROMMEL
Suite 418-815, 15th St., N.W.,
WASHINGTON, D. C.

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

INCORPORATIONS

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

ROYALTIES—PRODUCTION

MONTHLY INCOME-PAYING Royalties under Oklahoma City and Seminole Wilcox Sand wells offered. W. E. Cook, 342 Court Arcade, Tulsa, Oklahoma.

ROYALTIES in the territory of coming big development in Kansas, Stafford, Barton, Ellsworth, Kingman and Stevens Counties, core drilled. Also producing royalties. Special service to brokers. Send for list. James R. Haynes, Grantville, Kans.

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood. P. O. Box 2261, Tulsa, Okla.

UNUSUAL OPPORTUNITIES
FOR ROYALTY INVESTORS
AND DISTRIBUTORS

THE MERCURY COMPANY
Philtower Building, Tulsa, Oklahoma

JAMES B. McANALLY

Speculative & Investment Royalties

Hunt Bldg., Tulsa, Oklahoma

A service devoted exclusively to supplying opportunities to live wire brokers and dealers.

Information to Investors with address of nearest dealer on request.

CHEAP ROYALTIES—Shell-Humble midwest Blocks, Kans., Okla., Texas. Big list, agents wanted. Harry Haynes, Grantville, Kans.

ROYALTY and leases Goliad County, Texas, close up to Humble location on huge core drilled block. James R. Haynes, Grantville, Kansas.

PRODUCING OIL ROYALTIES
Henry S. Severson, Court Arcade,
P.O. Box 1341, Tulsa, Okla.

Dealer in Odd Lots
PRODUCING OIL ROYALTIES
I Buy and Sell
John L. Dickson, Box 1114, Tulsa, Okla.

Wanted for Resale
in Great Britain
PRODUCING OIL ROYALTIES
Correspondence invited
MID-WEST OIL ROYALTIES, LTD.
120 Moorgate. London, E.C.
England
Cables. Desairusto. London

ROYALTY (producing, proven, or speculative) and LEASES. Special attention to dealers. Fred B. Manley, Box 737, Hobbs, New Mexico.

STANOLIND CHASE, TEXAS SANDLIN, GYPSY GRAY, quoted dealers. Plats data and full information. W. E. Cook, 342 Court Arcade, Tulsa, Okla.

CLASSIFIED DISPLAY RATES

The rate for Classified Display Advertising set in similar style to this Ad or in two Column style is as follows for each insertion:

1 inch ..... 1 time $5.00
1 inch ..... 13 times 4.50
1 inch ..... 26 times 4.00
1 inch ..... 52 times 3.50

Rates for Classified without display shown on opposite column.

One point borders and ten point capitals are allowed, larger type not accepted.

Changes in copy must be in our office 10 days in advance of publication date.

Mail your advertisement to the Largest Classified Section in the Oil Industry.

THE OIL AND GAS JOURNAL

TULSA OKLAHOMA

LEASES—PRODUCTION

10 to 160 ACRES near East Texas operations $2.50 to $10 likely to be worth $500 acre shortly. You can make plenty money if buy right class property. E. Croft, Proctor, Texas.

10,000 ACRES for 3,500-ft. well Yalobusha County, Mississippi. Best wildcat structure entire United States. 1 yr. free, 25c rentals. 223 Court, Memphis, Tenn.

MR. BROKER AND INVESTOR
Inquiries for leases, Royalties, Drilling Blocks and Oil Payments solicited. W. R. Miller, 1216 Hurley Ave., Ft. Worth, Tex.

WILL SELL 40 acres of my 80-acre lease close to deep test drilling in S.E. Oklahoma. Address Edythe Burnham, 312 Walnut St., Texarkana, Ark.

TEXAS PANHANDLE Gas Production and Royalties is my Hobby—get my prices. Wire or write. E. B. Reeves, Box 13, Alanreed, Gray County, Texas.

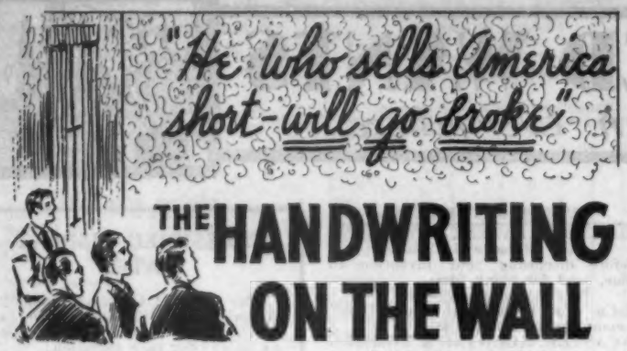
FOR SALE
Several thousand acres of mineral rights, covering one-half of the oil and minerals on the land. For sale on the basis of $500 per quarter, for one-half of the mineral rights thereon. They are perpetual and participating. Located in Hodgeman, Trego, Ford, Kearney, Seward and Haskell Counties, Kansas. Also have several commercial blocks on good structure, and several drilling blocks. Brokers and Promoters do not answer. Write P.O. Box 471, Dodge City, Kansas, for further information.

NEW MEXICO Oil Leases, Lands and Royalties. Free State Map and information. Roy G. Barton, Clovis, New Mex.

HAVE several thousand acres POTASH lease located Southeast New Mexico, wish to make connection with party to core drill this. Roy G. Barton, Box 191, Clovis, New Mexico.

HUTCHINSON COUNTY, TEXAS—Would lease 80 acres, half mile from production, on contract to drill at once. Bonus out of oil & gas—no cash. Address Box F-192, The Oil and Gas Journal, Tulsa, Okla.

200,000 ACRES, leases, Oil and Gas territory. 6,600-acre lease, proven territory. Bargains. K. S. Loving & Co., Amarillo, Texas.



THE HANDWRITING ON THE WALL

Trim your sails to meet existing conditions. That's wise. But don't gamble that America will go to the "bow-wows." That's foolish.

Since 1776 the old U. S. A. has gone right on—weathering storms, as well as basking in prosperity. Bridgeport is "bullish" on America's future; steadfast in our belief that the oil industry will rise to greater heights than ever before. It must—because it is one of the great essentials.

Watch this page each week—study the real bargains you'll find on it, then take advantage of them. Bridgeport offers you dependable oil field equipment at prices that enable you to trim your sails on overhead, and operate profitably under present conditions. You can get everything you need from us, in rotary or cable—new or used. Call us collect—day or night.

Hychrome Casing Shoes Save Time and Money

Made of alloy steel—heat treated. Stand up under crushing force of heavier casing and deeper wells. Tensile strength 160,000 lbs. per square inch, exactly 100% greater than shoes made old way. You always play safe when you use Hychrome Casing Shoes. Stocked at all Bridgeport branch stores. Prices in line with other make shoes. Phone or wire us collect for full details.

Test on Hychrome Shoe — Same test on ordinary Shoe

Real Bargains in Casing and Line Pipe

We offer the following casing and line pipe subject to prior sale:

At Oklahoma City:
- 700 ft.—15½"—70 lb., 8 thread casing—used.
- 5000 ft.— 4½"—16.60 lb. Drill pipe with tool joints on—used.

At McPherson, Kansas:
- 575 ft.—20"—90 lb.—8 thread casing—New.
- 450 ft.—15½"—70 lb.—8 thread casing—used.
- 3410 ft.—5 3/16"—20 lb.—10 thread Seamless casing—used.
- 2832 ft.—5 3/16"—20 lb.—11½ thread Seamless casing—used.
- 5139 ft.—4" Line Pipe, used.
- 4350 ft.—3" Line Pipe—used.
- 6000 ft.—2" Line Pipe—used.

At Kilgore and Camps, Texas:
- 1400 ft.—10"—40 lb.—8 thread Lapweld casing—used.
- 1650 ft.—7" O. D.—20 lb.—10 thread Lapweld Casing—used.
- 850 ft.—4½"—16.60 lb. Drill pipe with A. P. I. Tool Joints—used.
- 7700 ft.—4" Line pipe—used.
- 12000 ft.—2" Line pipe—used.

Write for prices to any of our Branch stores, or call us collect.

WE WILL BUY

Bridgeport is at all times in the market for good grades of used casing, line pipe, Rotary drill pipe, Seamless upset tubing, etc. Also 40 H.P. Gas or Oil pumping engines, large Boilers and complete or separate Rotary Units. Turn your surplus material into cash. Write or wire the Wichita office.

BRIDGEPORT MACHINE COMPANY

Wichita, Kansas

Branches Conveniently Located in All Active Mid-Continent Oil Fields

BRIDGEPORT MACHINE COMPANY, Wichita, Kansas. Check here ☐
Gentlemen: Please send me copy of your Free bargain list.
I am in the market for ..
..
.....(new) ☐ (used) ☐
Please advise me if you can supply me—also quoting your lowest delivered price to .....
Name .....
St. & No. .....
City ..... State .....

Index to Advertisers

A

Allis-Chalmers Mfg. Co. .....
Allis, Louis, Co., The .....
Allsteel Products Mfg. Co. .....
American Cable Co., Inc. 7
American Cast Iron Pipe Co. ....
American Meter Co. 1
American Steel & Wire Co. 4
Armstrong Machine Works 87
Ayer & Lord Tie Co. .....

B

Barber-Greene Co. .....
Baroid Sales Co. .....
Barrett Co., The .....
Barret, William M., Inc. .....
Bethlehem Steel Co. .....
Bignall & Keeler Machine Works.
Black, Sivalls & Bryson, Inc. ....
Bradford Motor Works, Inc. .....
Brewster Co., Inc., The 8
Bridgeport Machine Co. 96
Bristol Co., The 85
Brown Instrument Co. 2
Byers, A. M., Co. .....
Byron Jackson Co. .....

C

Carey, Philip, Co., The .....
Caterpillar Tractor Co. .....
Chain Belt Co. 43
Chaplin-Fulton Mfg. Co., The ... 87
Chapman Valve Mfg. Co., The ...
.....Inside Front Cover
Chicago Bridge & Iron Works ...
Cities Service Co. .....
Classified Wants 95
Cleveland Trencher Co., The .....
Continental Supply Co., The .....
Crane Co. .....

D

Darling Valve & Mfg. Co. .....
Dart, E. M., Mfg. Co. 63
Davis Regulator Co. .....
Dearborn Chemical Co. .....
De La Vergne Engine Co. .....
Dixon, Joseph, Crucible Co. .....
Dresser, S. R., Mfg. Co. 25

E

Eagle-Picher Lead Co. .....
Emsco Derrick & Equipment Co...
Ethyl Gasoline Corp. .....

F

Fenwick-Reddaway Mfg. Co. .....
Fisher Governor Co. .....
Foster Wheeler Corp. .....
Foxboro Co., Inc., The 81

G

Garlock Packing Co., The .....
Gasoline Products Co., The .....
Gaso Pump & Burner Mfg. Co. ...
.....Inside Back Cover
General Electric Co. .....
General Paint Corp. .....
Goodyear Tire & Rubber Co. ....
Gott, H. P., Mfg. Co., Inc. .....
Goulds Pumps, Inc. .....
Graver Tank & Mfg. Corp. 35
Gray Processes Corp., The .....
Griscom-Russell Co., The .....
Guiberson Corp., The 10

H

Hall, R. B., & Co. .....
Halliburton Oil Well Cementing Co. 5
Hazard Wire Rope Co. .....
Hedges-Walsh-Weidner Co., The ..
Heeter, C. M., Sons & Co. .....
Highland Iron & Steel Co., The ..
Hill-Hubbell & Co. .....
Hope Engineering Co. 82
Hughes Tool Co. ..... Back Cover
Humble Oil & Refining Co. .....

I

International Harvester Co. of America .....
International-Stacey Corp. .....

J

Jackson Co., Byron .....
Jarecki Mfg. Co. .....
Jenkins Bros. .....
Jerguson Gage & Valve Co. .....

K

Kellogg, M. W., Co., The .....
Kennedy Valve Mfg. Co., The ....

L

Landis Machine Co., Inc. 3
Layne & Bowler Co. .....
Leader Iron Works, Inc. .....
Lincoln Electric Co. .....
Linde Air Products Co. .....
Lufkin Foundry & Machine Co., The .....
Lummus Co., The .....
Lunkenheimer Co., The .....

Mc

McClintic-Marshall Corp. .....
McIntosh & Seymour Corp. .....
McKee, Arthur G., & Co. .....

M

MacWhyte Company .....
Magnolia Petroleum Co. 79
Maloney Tank Mfg. Co. 36
Mathieson Alkali Works, Inc., The
Metric Metal Works 1
Midwest Piping & Supply Co., Inc.
Moore, Lee C., & Co., Inc. .....
.....Front Cover
Munn & Co. 94

N

National Lead Co. .....
National Supply Co. .....
National Transit Pump & Machine Co. 6
National Tube Co. 21
Naylor Pipe Co. .....
Neilan Co., Ltd. .....

O

Oakite Products, Inc. .....
Oil and Gas Journal, The 52
Oil Well Supply Co. .....

P

Page Fence Ass'n. .....
Page Steel & Wire Co. .....
Paraffine Companies, Inc., The ..
Parkersburg Rig & Reel Co., The.
Penberthy Injector Co. 23
Petroleum Equipment Co. .....
Petroleum Iron Works Co. .....
Petroleum Rectifying Co. 49
Pittsburgh-Des Moines Steel Co...
Pittsburgh Equitable Meter Co. ..
Pittsburgh Steel Co. .....
Powell, William, Co. .....
Pure Oil Co., The .....

R

Reading Iron Co. .....
Reading-Pratt & Cady Co., Inc. ..
Reid, Joseph, Gas Engine Co. ...
Republic Steel Corp. 40A-40B
Robinson Orifice Fitting Co. ....
Roebling's, John A., Sons Co. ....
Rohm & Haas Co., Inc. .....
Ross-Meehan Foundries Co. 63
Ruberoid Co., The .....

S

Smooth-On Mfg. Co. 87
South Chester Tube Co .....
Spang, Chalfant & Co., Inc. 46
Sperry-Sun Well Surveying Co. .. 58
Sureshot Torpedo Co. 94

T

Taylor Forge & Pipe Works ....
Texas Electric Service .....
Timken Roller Bearing Co., The..
Toledo Pipe Threading Machine Co. 63
Trackson Co. .....
Tretolite Co. .....
Trimont Mfg. Co. 59
Truscon Steel Co. .....
Tube Turns, Inc. .....

U

Union Wire Rope Co. .....
Universal Oil Products Co. 19

V

Vellumoid Co., The .....
Vogel, Felix A. .....
Vogt, Henry, Machine Co. .....

W

Wailes Dove-Hermiston Corp. ....
Westco Pump Corp. .....
Wickwire Spencer Steel Co. .....
Williamsport Wire Rope Co. ....
Winkler-Koch Engineering Co., The
Worthington Pump & Machinery Corp. .....

Y

Youngstown Sheet & Tube Co., The